THE TRANSFORMING POWER OF Information Technology

Making the Federal Government an Employer of Choice for IT Employees

National Academy of Public Administration

National Academy of Public Administration
1100 New York Avenue, Suite 1090 East
Washington, DC 20005
202-347-3190

First published August 2001.

Printed in the United States of America.

The paper used in this publication meets the minimum requirements of American National Standards for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI Z39.48.1984.

ISBN 1-57744-090-0

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MAKING THE FEDERAL GOVERNMENT AN EMPLOYER OF CHOICE FOR IT EMPLOYEES

A Report by a Panel of the National Academy of Public Administration for the Chief Information Officers Council and the Administrative Office of the U.S. Courts

August 2001

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FOREWORD

Information Technology has the power to transform the functions of the federal government and to place the services of government at the fingertips of its citizens. To realize this goal, the federal government must be able to attract and retain the very best workforce to develop, implement, and manage a wide variety of information technology systems. And to be able to attract and retain the very best and most proficient workforce, the federal system for recruiting, retaining, compensating, and developing information technology employees must change.

Recognizing the importance of this issue, the Chief Information Officers Council asked the Academy to initiate a study of alternative pay systems and related human resources management issues that might help the federal government attract and retain a skilled IT workforce. This study has identified a number of effective human resources management practices that can be used by the federal government to improve its competitive position in the "war for talent."

The research and analysis for this report has been completed through an effective partnership formed by dedicated individuals from the public and private sectors. The Academy is appreciative of the extensive support of the many organizations that provided valuable staff time for focus groups, interviews, and sharing their best practices as well as concerns. The Academy extends special recognition to IBM, Booz Allen and Hamilton, and SRA international; the Armed Forces Communications and Electronics Association, the Information Technology Association of America, and the Industry Advisory Council; the Administrative Office of the U.S. Courts, the Departments of Agriculture, Army, Health and Human Services, Housing and Urban Development, State, Treasury and Veterans Affairs, as well as the General Accounting Office. Individuals from these organizations met to brainstorm, share concepts, and offer proposed solutions throughout the project. Many of these discussions were critical to the final recommendations of the report. This project is an outstanding example of a public-private sector partnership working to address a significant problem facing the nation.

David F. Garrison
Vice President
National Academy
of Public Administration

Executive Summary

Office of Management and Budget Director Mitch Daniels has asked federal agencies to identify "high payoff e-government opportunities and set in motion a transformation of government around customer needs." Harnessing the transforming power of information technology (IT) requires top-notch IT leadership and technical skills. This places the federal government in a quandary. For while it is moving aggressively to modernize and make extensive use of new technologies and Internet capabilities to better serve its citizens, it is also suffering a steady and inexorable deterioration of its current IT leadership. As it seeks to deal with this challenge, it will encounter a highly competitive market for IT skills.

The federal government is not alone in facing these challenges. Significant innovations in personnel and compensation practices have taken place in every sector of the economy, in academia, state and local government, and nonprofit and international organizations. Such efforts may prove instructive for the federal government.

The Office of Personnel Management (OPM) has made major changes in federal IT job qualification and classification standards and entry-level pay rates. Many individual federal agencies have also received special authorities that ease their IT recruitment and retention challenges. Many of these changes have been sponsored and supported by the federal Chief Information Officers Council. However, all of this work has been constrained by compensation and reward systems that are out-of-date and non-competitive when viewed in the light of a national marketplace for IT skills. Fundamental and cohesive reform is necessary to make the federal government an employer of choice for talented IT leaders and professional staff.

A New Approach is Needed

In light of the demand and competition for IT skills and the federal government's need for these skills, a new innovative approach is required. Faced with this situation, the Chief Information Officers Council and the Administrative Office of the U.S. Courts asked a panel of the National Academy of Public Administration to examine alternative pay systems and related human resources management (HRM) programs that would allow the federal government's chief information officers to compete successfully for scarce talent in a market-driven, performance-based environment.

Research Findings

The issues and problems which follow, must be solved if the federal government is to attract and retain the IT talent needed to manage its IT programs effectively and efficiently.

Shortage of Qualified IT Professionals—There is a significant shortage of IT professionals nationwide that is not anticipated to improve for 20 years or more.

Aging Workforce With Problematic Turnover—The federal shortfall in IT professionals is aggravated by the fact that over half of this workforce is eligible to retire within the next 10 years.

Pay Gap With the Private Sector—The annual salary survey conducted by *Computerworld* provides an index of the annual salaries paid by various industries, including government (collectively at all levels), for specific IT jobs. The most recent survey results show that at the mid-level and senior management levels there was not

one position in which government met the industry average, with most positions falling significantly lower.

A Broken Recruitment System—Under Title 5, the federal government does not have the tools necessary to compete for new IT professionals in a highly competitive market place; or to manage its current workforce of IT professionals effectively. The federal recruitment process is slow, lengthy, and rigid. The many inexplicable steps and prolonged delays mean that many of the well-qualified candidates for IT professional positions have already accepted another job before a federal agency can make an offer.

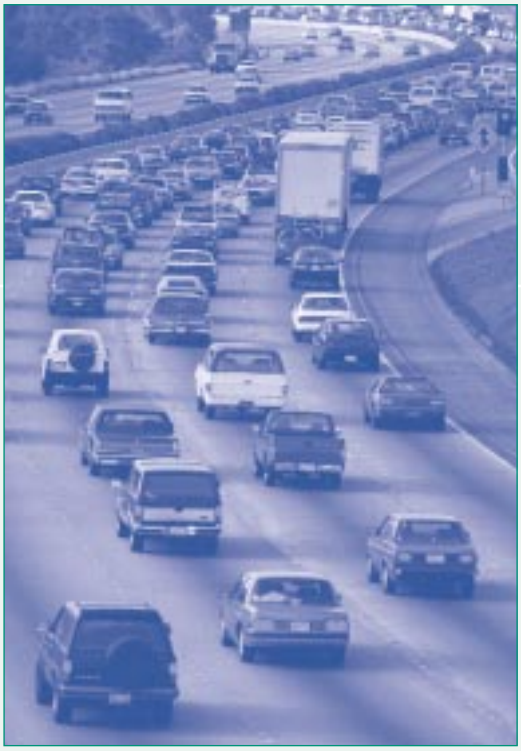
Inadequate Motivational Tools—The federal personnel system contains inadequate tools to motivate employees to achieve high performance. The Academy's project team found that IT professionals prefer compensation systems in which increases are based solely on performance and not on longevity. Not surprisingly, the team also found that effective HRM systems for IT professionals include annual increases based on merit and not on time on the job.[1]

Overly Focused on Internal Equity—The private sector is moving away from a one-size-fits-all compensation approach to one that emphasizes pay-for-performance and external competitiveness. By focusing on internal equity, the federal government's human resources management system is severely constrained in competing for IT talent and effectively

managing the IT talent that it already has.

Too Little Investment in Continuous Learning—There is a lack of investment in continuous learning within the federal government. This failure is especially problematic in the dynamic and rapidly changing world of IT. Such an environment makes it essential to invest in people. The Treasury Department sums up the overall picture as "one of deteriorating skills in a career field for which keeping skills current requires lifelong learning."[2]

Outdated Classification System—The federal system for classification is expensive, inflexible, and out-of-date. The current federal classification system is based on an industrial model for the 1940's mode of work. Correspondingly, the current classification system represents a hierarchical approach to performing work.



RECOMMENDATIONS

The project panel recommends that the federal government transition to a market-based HRM system for IT professionals that would accomplish the following:

1. Establish a Market-Based, Pay-for-Performance Compensation System

The federal government should adopt a market-driven, pay-for-performance system to determine base pay, performance-based incentives, and appropriate pay adjustments/increases for IT workers. This compensation approach would establish broad pay ranges, tie base pay to market rates, and link increases to pay to competencies and results to attract and retain IT talent. The new system must narrow the pay gap between private- and public-sector IT workers.

2. Allow for Flexibility in the Treatment of Individuals and Occupations

The new compensation system should ensure that managers have the flexibility to pay individual workers for their respective skills and competencies as well as their contributions to the organization. The system should provide flexible salary ranges for recruitment and retention purposes.

3. Improve Recruiting and Hiring Processes

The new compensation system for IT professionals must be linked to faster, enhanced recruitment and

hiring processes if the federal government is to attract the workers it needs. In today's IT labor market, the approach an organization uses to recruit, the mechanisms for getting the message out, and the speed of the process are the most critical elements of its ability to bring new employees on board.

4. Balance the Three Dimensions of Equity

A new federal IT compensation system should move to a better balance between and among internal equity, external equity, and contribution equity.

5. Offer Competitive Benefits

For senior executives or professionals at the highest levels of their career ladders, federal benefits are not competitive with the private sector. Until the federal government can offer a more competitive benefits package for senior technical employees as well as executives, it will not be successful in its recruiting battles for these individuals.

6. Promote Work/Life Balance Programs

Federal managers and human resources specialists must actively market these benefits and programs so that potential IT workers are aware of them. The benefits and aspects of the different programs should also be included in recruitment materials and advertisements. Agencies also must ensure that their work/life programs are flexible enough to provide for selection by employees according to individual needs, as long as the accomplishment of agency mission is supported.

7. Encourage Management Ownership

Managers must actively participate in the design and implementation of agency-specific features of the new system and must be rewarded for effectively implementing and managing the system. Conversely, managers who refuse to make the tough personnel decisions in setting

pay, awarding bonuses, scheduling training, mentoring, and other factors must be held accountable for not carrying out their management responsibilities.

Overall, federal agencies—and especially the managers in agencies—must create a learning culture.

8. Support Technical Currency and Continuous Learning

Technical currency and continuous learning are critical components of an HRM system for IT professionals. Agency management should design and support developmental activities through a number of vehicles including formalized training, on-the-job training, computer-assisted learning, self-instructional guides, coaching, and other approaches. Overall, federal agencies—and especially the managers in agencies—must create a learning culture.

9. Build in Reliability, Clarity, and Transparency

Agency budgets and management decisions must support full implementation of the system. Congress, the Office of Management and Budget (OMB), OPM, and agency political and career executives must ensure that agency appropriations are reflective of a commitment to this system. The new system must be reliable so that employees are treated in a consistent manner as dictated by individual facts. Reliability means consistent conformance with policies so that the same set of circumstances always leads to a fair decision and result.

10. Implementation

Detailed implementation planning and execution is an essential component of success. At a minimum, the following steps must be taken:

- identify champions for the new system in the political and career leadership of each agency
- translate the recommendations of the report into legislative and programmatic action items
- translate the legislative and programmatic decisions into detailed agency by agency action items
- develop a communications strategy
- develop an education strategy
- develop a detailed plan to carry out the communications and education strategies
- provide sufficient funding for both the system and the implementation activities

CONCLUSION

Information technology has the power to transform the level of quality and quantity of government services provided to American citizens. To realize this goal the federal government must have the tools needed to win the "war for talent." The tools in the current system are not adequate for the challenge. New tools are necessary. In order to provide these tools significant reform is required. This reform must have several key elements:

1. A Market Solution for a Market Challenge

Pay systems must be based upon objective and dynamic market criterion determined by studies of the marketplace for IT skills. Broad and static systems that link IT pay to non-related occupations will not be responsive to the pace of change in this occupation.

2. A Premium for Performance

Current federal compensation systems promote equal treatment for all employees in the guise of "internal equity." The success of most effective private-sector systems is gauged by the ability to distinguish and disproportionately reward the top performers based upon their contribution to organizational goals and objectives. The generation now entering the workforce strongly supports this model of "contribution equity." A key component of this approach would be to focus on the skill sets that will be most critical for the government to maintain and develop—IT executive leadership and IT project management.

3. A Balanced Work/Life Program

Although a great deal of emphasis has been put on salary, the panel has found substantial support for approaching salary as one component in an overall program to attract and enhance the workforce. Organizations with competitive salary structures do not have to pay at the top of commercial pay ranges if they couple salary with development opportunities, flexible work arrangements, competitive benefit packages, and other job elements that are responsive to the needs of workers. Training and development are elements that are particularly important to IT workers.

4. A Rational Transition

The changes proposed in this report have been tried and tested in many private- and public-sector environments. Elements of these recommendations are already operating in a number of federal agencies and in the U.S. Courts. The panel recognizes that introducing such changes governmentwide will challenge the existing culture of many federal agencies. To be successful, significant change management and training efforts are needed for managers and their employees. The panel recommends introducing these concepts through a structured implementation plan.

CHAPTER 1

THE ISSUE

"The United States is currently confronting what can best be described as another industrial revolution. The rapid acceleration of computer and telecommunications technology is a major reason for the appreciable increase in our productivity in this expansion, and is likely to continue to be a significant force in expanding standards of living into the twenty-first century."

Alan Greenspan
Chairman
Federal Reserve Board
July 10, 1998

"As public servants we are obligated to provide our citizens with the best service possible under our laws at the lowest possible cost. Advances in computer technology provide a great opportunity for improving government service. However, we can only take advantage of this opportunity if we have a skilled workforce that can manage and implement high technology products."

Fred Thompson
Office of the Chief Information Officer
Department of the Treasury
June 15, 2001

Computer and telecommunications technologies are becoming increasingly intertwined with the way people live, work, and play. Information and its distribution through technology are now primary drivers of the U.S. and global economies. Advances in IT have also played a major role in improving productivity, quality of life, and standards of living in the United States and abroad.

Governments at all levels rely on IT to improve their efficiency and effectiveness, institute performance-based management, and improve communications with citizens. In addition, agencies are using IT to develop e-government, which is transforming the relationship between citizens and government by enabling the delivery of services more directly, more rapidly, and electronically to the individual citizen. E-government provides an opportunity for the nation to

re-engineer the way government operates by creating an accessible, unencumbered system for citizen service and engagement.

The federal government is a primary consumer of IT systems and capabilities. In fiscal year 2001 the IT budget exceeded $42 billion, with a total investment of $150 billion.[3] This number is expected to grow steadily as every department, agency, and organization in the federal government—from the White House to the Capitol to the Supreme Court, from the Department of Agriculture to the Department of Veterans Affairs to the Administrative Office of the U.S. Courts—will be making significant investments in IT. Whether a federal agency is developing IT systems, implementing those systems, or providing policy and procurement oversight for IT products, it must have a skilled workforce in the right place at the right time if it is to meet increasing demands for a citizen centered, market-driven, and performance based government.

Yet, against this backdrop, there is a crisis looming that if unresolved will imperil the ability of federal agencies to carry out their missions.

In a matter of years, the federal government is in danger of having a significant shortfall in its workforce of IT professionals who can develop, implement, and manage IT systems and provide expert policy and procurement guidance. The problem is the result of a number of converging factors facing federal IT programs:

- a need to increase the IT workforce by 20 percent over the next 7 years
- an aging workforce, of which 50 percent is eligible to retire by 2006
- an IT labor force that will have its choice of more than two positions per qualified candidate
- an HRM system that is inflexible and unresponsive to the changing demands of the modern work world
- a significant shortage of qualified IT professionals
- a cumbersome recruitment process
- inadequate tools to motivate employees
- a lack of investment in continuous learning
- an outmoded classification system
- a pay gap between the private and public sectors

These problems are not short term. For nearly 20 years, there have been more IT positions than there were qualified individuals to fill those positions in the public and private sectors. The pace of change and the increase in complexity, when coupled with the relatively low number of individuals graduating from college with IT-related degrees, assures that these problems will continue well into the twenty-first century. The Department of Commerce publication, *America's New Deficit,* cites BLS projections that across all sectors, 820,000 new IT jobs will be created by 2005. By factoring in turnover, 1,047,000 new entrants into the job pool are needed by 2005. More recent updates show that the gap has widened between the number of IT jobs to be filled and the number of qualified candidates.

"During the next five to 10 years, GartnerGroup expects the fusion of business and IT to take root in more than 60 percent of enterprises,

with business managers, business process owners and business users assuming a greater percentage of activities that were formerly relegated to the [Information System] IS organization. Increasingly, enterprise know-how, interpersonal dynamics, business process understanding, and technical deftness will shape decisions about recruitment, retention, and career. People with moderate to deep technology skills will be paired with business process experts in enterprise resources planning implementation teams; senior managers in IT business development will serve as mentors of middle managers in telecommunications; workshops in contextual and conceptual thinking will first be mandated, and then requested by employees; and project leaders will team with accomplished resource and budget managers."

Building A Compelling Place to Work: New Heights in IT Human Resources Management
GartnerGroup RAS Services
R-10-5444

Faced with this explosion in the use of technology, an aging workforce, and an increasing demand for applicants in the labor pool, the federal government has struggled for the last decade to acquire adequate IT skills for its workforce. Through the combined efforts of OPM, the Chief Information Officers Council, and individual agencies, the classification standards for IT occupations were revised, and special pay rates, recruitment bonuses, and retention allowances were instituted. Recruitment processes are being streamlined. All of these actions are being taken to increase the likelihood that well-qualified candidates will want to take IT jobs in the federal government. While these heroic efforts individually and collectively have helped alleviate the problem to some degree, they have not positioned the federal government to be an employer of choice in the "war for talent."

Futhermore, while the federal government is a major consumer of IT already, it has just begun to explore the use of technology to fully implement e-government in the following ways:

- delivering services more directly, rapidly, and electronically to the individual citizen
- creating an unencumbered system for citizen engagement and communication
- using the forces of the marketplace to obtain the best IT products, systems, and workforce

If the federal government is to harness the full power of IT, it must have a well-skilled workforce. The current HRM system will not facilitate this transition.

In light of the demand and competition for IT skills and the federal government's need for these skills, a new innovative approach is required. For this reason, the Chief Information Officers Council and the Administrative Office of the U.S. Courts asked a panel of the National Academy of Public Administration to examine alternative pay systems and related HRM programs that would

allow the federal government's chief information officers to compete successfully for scarce talent in a market-driven, performance-based environment.

In undertaking this study, the Academy was asked to take a broad view of compensation, including but not limited to the following:

- salary
- retirement/pension plans
- recruitment and retention bonuses
- overtime/special pay policies
- perquisites

Other issues such as work environment, work-life quality, challenging work assignments, career advancement, and knowledge growth were also factored into the assessment since they impact the ability to compete for IT talent. The Academy also carried out the study in the context of the broader issues of the labor market, definitions of IT workers, and challenges to acquiring and developing the right skills in a world of rapid technological change.

The Academy, the CIO Council, and the Administrative Office of the U.S. Courts decided that the study should be approached in phases. Phase I was devoted to researching IT compensation practices in the public and private sectors, benchmarking those systems and practices for potential application to the federal government, reviewing existing legislative and regulatory authorities, gathering data and information through a thorough literature review, and identifying other issues impacting the compensation of IT workers.

Phase II was devoted to evaluating alternative compensation models identified in the research phase, conducting cost-benefit analyses of each alternative, reviewing legal issues for each alternative, recommending alternative compensation models, defining appropriate IT strategies, and identifying process and organizational changes necessary to implement recommendations. This final report describes the detailed findings of the study, offers recommendations for improving the federal pay system and recruitment and retention strategies for IT professionals, and suggests implementation strategies.

If the federal government is to harness the full power of IT, it must have a well skilled workforce. The current HRM system will not facilitate this transition.

This report contains six chapters. Chapter 1 defines the issue and Chapter 2 defines the associated problems. Chapter 3 describes key elements of two alternative HRM compensation systems. Chapter 4 contains the panel's recommendation for a new compensation system. The business case analysis is contained in Chapter 5. Chapter 6 is the conclusion. The detailed technical proposal, the Academy's methodology, the exhaustive research on issues and practices in the public and the private sectors, and other technical information are found in the appendices to this report.

CHAPTER 2

THE PROBLEM

Approximately 100 independent agencies carry out their unique missions within the United States government structure. Their functions and responsibilities require them to interact in various ways with private institutions and businesses operating in a wide array of fields of endeavor including banking, agriculture, space technology, tax collection, health care, ship building, education and nuclear energy to name a few. In spite of this diversity they are all required to operate within the same personnel system built upon nineteenth century principles of centralized policy development, selection from precisely numbered lists of job candidates, uniform pay scales, and a "one-size-fits-all" philosophy.

Center for Human Resources Management
National Academy of Public Administration
Letter to Senator George Voinovich on Civil Service Reform
March 13, 2001

With regard to improving government performance and accountability, the main actions needed to shape an effective and efficient federal government for the 21st century are . . .:

- First, give high priority to fully implementing existing legislation essential to modernizing performance management and . . . IT practices.
- Second, address the urgent need to revamp the federal government's entire approach to human capital (people) management before the erosion of the government's capacity to perform dramatically undermines agencies' abilities to effectively and efficiently serve the American people.

Major Management Challenges and Program Risks: A Government Wide Perspective
GAO Report GAO-01-241
January 2001

The problems inherent in the federal government's Title 5 USC HRM system are well documented in the Academy's prior research. The research performed for this study served to document further those deficiencies and to focus on the human capital problems specific to IT functions in the federal sector. The issues and problems, which follow, must be solved if the federal government is to attract and retain the IT talent needed to manage its IT programs effectively and efficiently.

These issues are:

- a shortage of qualified IT professionals
- an aging workforce with problematic turnover
- a cumbersome recruitment process
- inadequate motivational tools
- a pay system that is overly focused on internal equity
- a lack of investment in continuous learning
- an outmoded classification system
- a pay gap with the private sector

SHORTAGE OF QUALIFIED IT PROFESSIONALS

There is a significant shortage of IT professionals nationwide that is not anticipated to improve for 20 years or more. In 2000, the Information Technology Association of America (ITAA) projected a 12-month demand for IT workers of 1.6 million and a shortfall in filling jobs of approximately 850,000.[4]

Since then, although the technology sector has experienced a slow down, with some highly publicized job losses mainly in the dot-com sector, the overall demand for IT professionals is significantly higher than the supply. According to an April 2001 ITAA study, "In response to a variety of factors, companies appear ready to rein in their hiring plans and proceed cautiously. Not freeze hiring." ITAA's data show that demand for IT workers remains strong, and the U.S. requirement for a steady supply of new IT workers continues. According to the ITAA study, the United States has a national IT workforce of 10.4 million. The study states that U.S. companies need to hire an additional 900,000 workers this year., but it is estimated that 425,000 of these positions will go unfilled because of a lack of applicants with the requisite technical and non-technical skills.[5]

The *Journal for Career Planning and Employment,* in a 1997 article, noted that the shortage of technical employees is in part due to a dip in the number of graduates with technical degrees. The *Journal* reports that according to BLS, individuals graduating with a bachelor's degree in computer science numbered 42,195 in 1986 and only 24,200 in 1994.[6] *Fortune Magazine* points out that universities and colleges require a long lead time to develop programs—from 10 to 20 years—so that the shortage will not go away any time soon.[7]

Aging Workforce and Turnover

The federal shortfall in IT professionals is aggravated by the fact that over half of this workforce is likely to retire within the next 10 years. IT workforce statistics from OPM show that the vast majority of IT workers are older than 40.[8] As of the end of fiscal year 2000, OPM data show that there were a total of 59,577 IT professionals in the federal government.[9] This number includes all employees classified to the GS-334 Computer Specialist Series, GS-854 Software Engineering Series, and GS-1550 Computer Science Series.

During a four-year period, the total number of IT professionals in the federal government grew by 1.32 percent, from 58,797 to 59,577. At the same time, though, the number and percentage of younger workers decreased while that of older workers increased. In fact, the age of IT professionals in the federal government is surprisingly high, with 70 percent of the total IT workforce over the age of 41 and 29

percent over the age of 51. Figure 2-1 below shows this aging of the workforce between fiscal years 1996 and 2000. With 29 percent of federal IT professionals at age 51 or over, one would expect a high rate of retirements over the next few years. The data indicate that this is the case. By the end of fiscal year 2004, over 50 percent of all IT professionals in the federal government will be eligible to retire.

Most federal employees continue to work over three years beyond their eligibility for retirement.[10] Therefore, while over 50 percent may be eligible to retire, it is unlikely that this total number will retire at the same time. In an April 2001 briefing at the Academy's Conference on Workforce Quality, OPM's assistant director for workforce information stated that OPM projects that of the 30 percent eligible to retire in all occupations government-wide, a little over half, or 19.2 percent, will actually leave immediately upon eligibility.[11] OPM also stated that predicting retirement rates is not an exact science.

While one cannot assume that over 50 percent of federal IT professionals will retire in the next three, four, or five years, it is probably safe to assume that over 50 percent of current federal IT professionals, or around 30,000 workers, will retire within the next 10 years. Over the

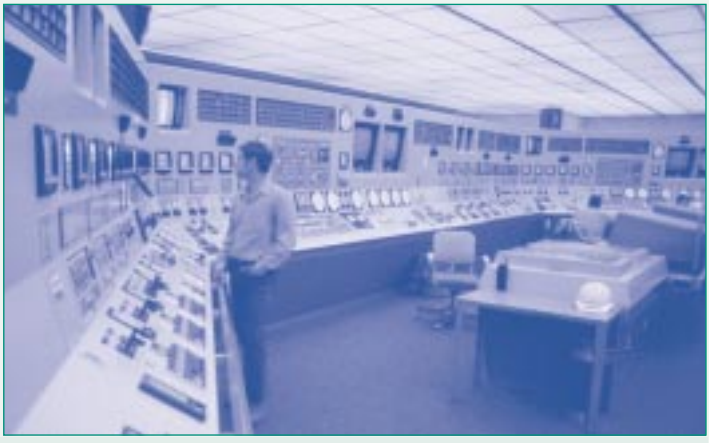


FIGURE 2-1
AGE OF FEDERAL IT WORKFORCE

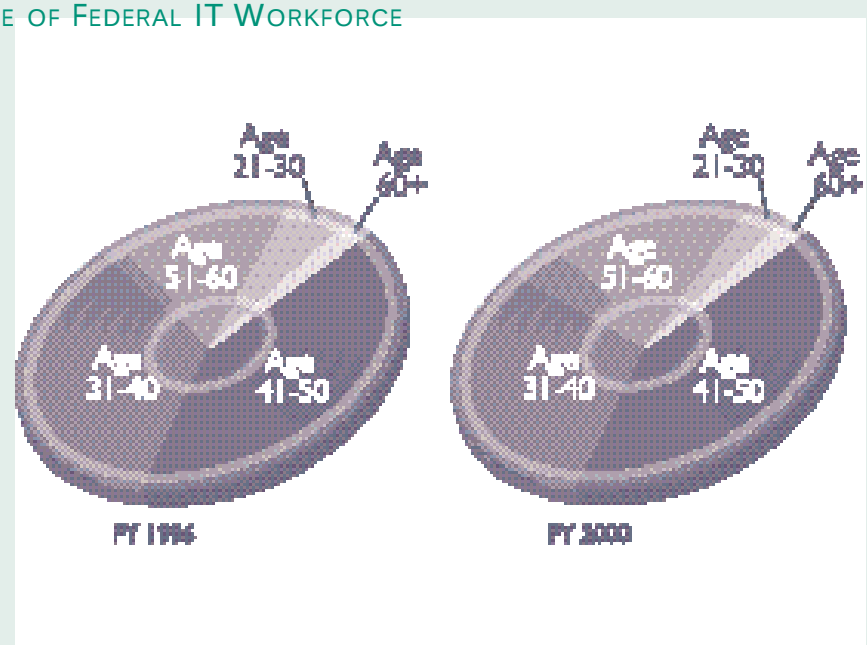


TABLE 2-1
BREAK DOWN OF IT PROFESSIONAL TURNOVER FOR FISCAL YEAR 2000

Age	Total Workforce	Quit Number Who Have	Quit %	Transferred Number Who Have	Transferred %	Retired* Number Who Have	Retired* %
21-30	2,410	250	10.4%	32	1.3%	–	–
31-40	15,211	629	4.1%	256	1.7%	–	–
41-50	24,152	398	1.6%	379	1.6%	–	–
51-60	16,010	144	.9%	129	.8%	–	–
60+	1,794	10	.5%	8	.4%	–	–
Total	59,577	1,431	2.4%	804	1.3%	1,505	2.5%

*Retirements by age not available. Total turnover out of government (excludes transfers) for fiscal year 2000 was 4.9% Total turnover out of a given agency (including transfers) for fiscal year 2000 was 6.3%.

same course of time, the federal government is projected to need over 16,000 additional IT workers. This translates to a net need of over 45,000 IT professionals in the next 10 years.

Turnover

Turnover among IT professionals nationwide was as high as 16 percent one year ago.[12] It has decreased somewhat with the softening economy. Turnover among IT professionals in the federal government, though, is almost nonexistent. OPM's most current statistics show that there is almost no turnover of IT professionals in the federal government, except among younger workers.[13] Table 2-1 provides a breakdown of all turnover by quits, retirements, and transfers (from one government agency to another) for fiscal year 2000.

How can the federal government be keeping its IT professionals, especially in a tight labor market and with a pay gap with the private sector as high as 15.7 percent? One explanation could be the Civil Service Retirement System (CSRS), a retirement plan that motivates individuals to retire as federal employees due to its high value and security. CSRS could explain why turnover is low among employees age 40 and older. But, what about employees between ages 21 and 40? Under age 30, turnover at 10.4 percent is closer to the numbers seen among private-sector companies. However, between 31 and 40, only 4.1 percent leave the federal government. Federal employees at this age are enrolled in the Federal Employees' Retirement System (FERS) which is portable.

Other explanations for low turnover include a sense of public duty or the security or stability of a federal job. The CBO addressed this issue in its 1997 memorandum, *Comparative Federal Salaries,* on federal pay. The memorandum

points out that because the government can provide the opportunity for change, variety, and advancement through internal transfers, employees may not feel the need to change employers. The value of federal retirement benefits and the large retirement penalties imposed on some federal employees who quit early are also contributing factors to low turnover according to the memorandum.[14]

Inordinately low turnover can be as costly and damaging to an effective organization as extremely high turnover. For an organization to remain vital it must have a reasonable flow through of employees at every level. The abundance of IT professionals at the senior levels of federal agencies is problematic, given the general lack of investment in continuous learning and skills enhancement that characterizes the federal government generally and the IT occupation specifically.

Recruitment Issues

The federal government does not have the HRM tools necessary to compete successfully for new IT professionals in competitive marketplace; and to manage effectively its current workforce of IT professionals.

In the research phase of this study, the project team found excellent examples of innovative programs and practices (at local, state, and federal levels) for improving an organization's ability to recruit and retain qualified IT professionals. These practices included (1) broad banding, pay banding, and bands of pay ranges; (2) special salary rates and pay differentials for IT workers; (3) various bonuses, such as signing bonuses and bonuses for scarce skills; (4) streamlined hiring processes that include direct-hire authority; and (5) enhanced IT training and development opportunities.[14] Where these strategies have been in place long enough to measure results, they are showing success.

While more detailed information can be found in *Appendix I: Innovative Practices*, Table 2-2 summarizes the degree to which the states surveyed for this study are using innovation and flexibility in their recruitment efforts.

The private sector, which has recruiting advantages over the public sector, such as fewer constraints and, in some cases, the ability to offer stock options or stock grants, is doing even more to compete for scarce IT talent. The private sector is moving "away from a one-size-fits-all, internal-equity-based compensation approach to one that emphasizes pay-for-performance and external competitiveness. Major changes in reward system design focus now on paying for individual competencies versus jobs and moving from a commodity view to one of investment."[15] Companies are implementing simple and flexible HRM systems that can be updated easily and quickly and that allow line managers to assume many decision-making responsibilities.

The federal government's HRM system under Title 5 does not provide the tools needed to allow federal organizations and federal managers to compete for IT talent. Mitchell Daniels, director of OMB, puts it this way: "Flexibility is sadly

lacking in the entire federal personnel system. Not just in pay and benefits, but in how we recruit and get the people we bring in."[16]

John Palguta of the Merit System Protections Board has stressed that the recuitment issue needs urgent attention. In the December 2000 *Issues of Merit* magazine, Palguta stated:

> "The federal government is severely limited in its ability to compete for highly qualified candidates in at least some occupations and geographic areas. A relatively inflexible compensation system that is still insufficiently sensitive to labor market forces is part of the problem. Simply raising salaries across the board, however, is not feasible, nor will it really solve the problem. A multi-faceted response in needed which also deals with the negative image of the federal government as an employer, ineffective or outdated recruitment strategies, and lack of a coherent approach to employee selection and hiring that leaves applicants and would be applicants baffled and frustrated."[17]

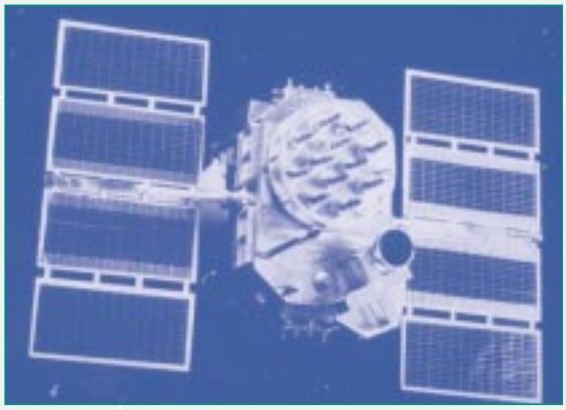
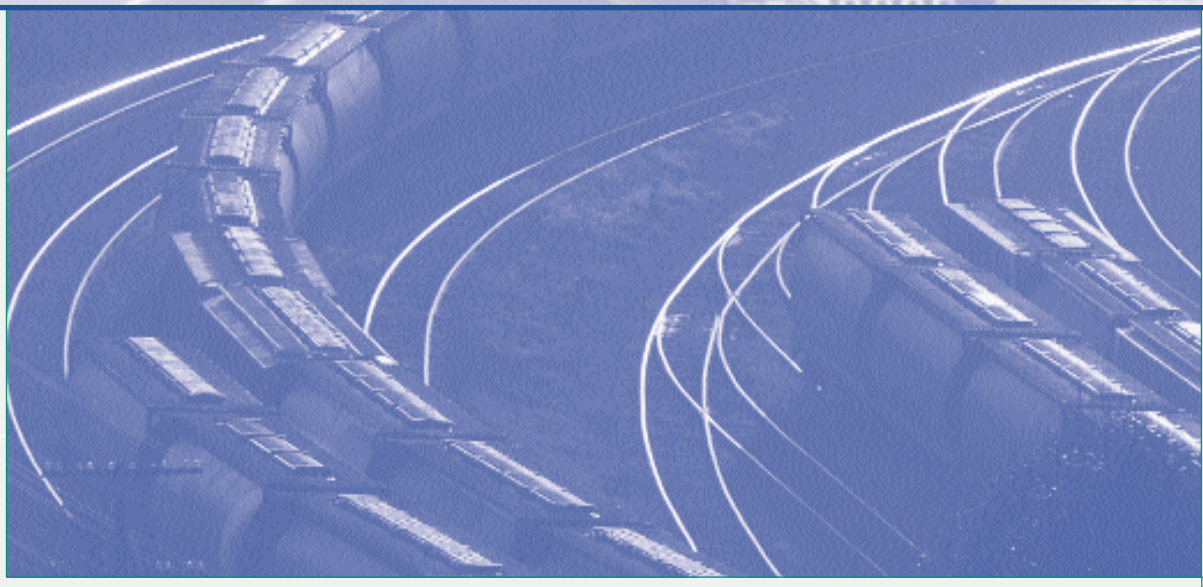


TABLE 2-2
INNOVATIVE PRACTICES STATE GOVERNMENT

	NJ	SC	VA	KS	MN	WS	MO	NV	OR	UT	WA	AZ	TX
Changes to Pay Approaches	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special Bonus Programs		✓	✓	✓	✓	✓		✓		✓			✓
Quality of Life Programs			✓	✓	✓		✓		✓	✓	✓	✓	✓
Training/Work Enhancements	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
Recruiting and Hiring Processes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The categorization of the states' practices in the above table does not fully capture the level of innovation and flexibility included in some of their approaches.



Cumbersome Recruitment Process

The federal recruitment process is slow, lengthy, and rigid. The Academy's rersearch for this study confirmed that a critical problem in competing for IT talent is the existing federal hiring process. The many inexplicable steps and prolonged delays inherent in the hiring process cause most candidates for IT professional positions to accept other jobs before federal agencies are able to make offers. The Treasury Department's 1999 study, *Responding to the Crisis in Information Technology Skills,* states that "Although 'public' job advertisement should be an advantage for the government, it often is done in an arcane and formulistic method which means little to those outside government. Announcements are often many pages and require lengthy essays on experience. In a labor market in which applicants can paste a one-page resume from their computer into a Web page and apply for a job, this process seems cumbersome and rigid. Even finding out about the existence of such 'open' announcements can be extremely difficult to the uninitiated."[18]

The negative impact of the federal hiring process was further confirmed in a presentation the National Association of Colleges and Employers (NACE) gave at an Academy conference on workforce issues in April 2001. According to NACE, their survey of a representative sample of college students showed that the federal hiring process is a major deterrent to the federal government's ability to attract and retain well-qualified applicants.[19]

Most federal HR specialists and IT professionals that the project team interviewed in the research phase cited these same factors as impediments to the recruitment process. In contrast, all of the private-sector companies that the study team interviewed pointed out streamlined recruitment processes as critical to their ability to hire qualified IT professionals.

Rigid qualification requirements are another major problem with federal recruitment. Fortunately, the Office of Personnel Management, in partnership with the CIO Council has changed the qualification requirements to rely on competencies. OPM is now conducting pilots with a number of agencies using competency-based structured interviews as a selection process. The challenge will be to ensure that federal managers and employees learn to use these new flexibilities, and not turn them into bureaucratic processes. The use of competencies will give the federal government a distinct advantage in trying to attract younger workers—those who most likely have the latest IT skills but have the fewest years of experience. Without the use of competencies the manager's ability to offer an outstanding candidate base pay consistent with the competencies and abilities that the candidate would bring to the job is limited significantly.

MOTIVATING EMPLOYEES

The federal personnel system contains inadequate tools to motivate employees to achieve high performance. One basic component of compensation theory is that pay can be an effective tool to motivate employees to achieve excellent performance. In a broader sense, organizations are making increasing, explicit use of performance management and reward systems to communicate and reinforce overall strategy and organizational goals.[20] In the research phase of this study, the project team found that IT professionals prefer compensation systems in which increases are based primarily on performance (and not on longevity) and that effective HRM systems for IT professionals include annual increases based on merit and not on time-on-the-job.[21]

The federal personnel system includes an element of pay-for-performance. However, in reality, almost all employees are treated identically. Studies by OPM and federal agencies show that almost all employee performance ratings are either four or five on a five-point scale. Furthermore, the amount of increase available is less than two percent per employee. By not differentiating between employees, the current pay-for-performance system achieves the opposite of its intent. Or, as two compensation experts from A.T. Kearney state: "Too many company reward systems have a compensation spread between the best performer and the worst performer of five to ten percent. This is hardly adequate to ignite the winners to greater glory and to get the losers worried."[22]

The federal personnel system contains inadequate tools to motivate employees to achieve high performance.

Figure 2-2
The Three Dimensions of Equity

Focused on Internal Equity

Intentionally or unintentionally, organizations consider and establish a strategic balance of the three perspectives of equity as they determine pay rates and reward structures. See Figure 2-2. The current federal one-size-fits-all civil service system is closely aligned with internal equity by law, regulation, and practice, with little real attention paid to external equity and contribution equity. Due to law, regulation, and practice, federal agencies tend to focus almost exclusively on internal equity when determining what is fair compensation. In an internal equity system, one's pay is determined by the relative value of each job within an organization. Private-sector organizations typically consider and establish a strategic balance between internal, external, and contribution equity as they determine pay rates and reward structures. External equity is based on a comparison with similar jobs throughout the labor market. Contribution equity is based on an employee's performance and contribution relative to other employees. The private sector is moving away from this approach and is instead emphasizing pay-for-performance and external competitiveness. By focusing on internal equity, the federal government's HRM system is severely constrained in competing for IT talent and effectively managing the IT talent that it already has.

Lack of Investment in Continuous Learning

There is a lack of investment in continuous learning within the federal government. This failure is especially problematic in the dynamic and rapidly changing world of IT. Such an environment makes it essential to invest in people. The Treasury Department sums up the overall picture as "one of deteriorating skills in a career field for which keeping current requires lifelong learning."[23]

In the federal government, though, neither traditional training nor lifelong learning is built into the HRM system. Individuals who acquire new skills or competencies to help them better perform their jobs are not rewarded, either in a formal or informal sense. In fact, federal policy discourages training and development for the purpose of obtaining an academic degree (Section 4107(a) of Title 5 U.S.C.)

except in special circumstances, and it forbids payment or reimbursement for the cost of examinations, licenses, or certifications, even if required by the state where the federal employee works (Comp. Gen. B-235727) or if required as a qualification for the employee's position (Comp. Gen. B-248955). Nor does the federal government adequately invest in training of its own. The Treasury Department reports that in FY 1998, it devoted approximately 1.5 percent of its IT payroll to the development of its IT staff.[24] This contrasts with "leading edge" companies in the private sector that devoted 4.39 percent of their payroll to training in calendar year 1998.[25] Data on training investments as a part of payroll government-wide is not available. However, Treasury, which employs over 9,300 IT professionals and includes a wide range of organizations with different types of IT needs and IT staffing, is easily representative of the overall IT professional population.

Comments from IT professionals and HR managers from throughout the federal government substantiate the Treasury Department's data. In a survey of employees with a major responsibility for IT in their positions, conducted by the Chief Information Officer's Council at the Centers for Disease Control (CDC) in 2000, comments regarding the lack of training were predominant among the 246 respondents. According to the survey, IT professionals at the CDC are clearly concerned with their ability to maintain their professional skills and competencies given the rapid change in IT.

Throughout this project, federal CIOs, HR directors, and IT professionals have all stressed the lack of training and inability to maintain skills. An IT professional at the Department of Veterans Affairs commented that "OPM programs seem to be geared to 30-year careers. This needs to change. Government needs to be sold as more of a project-based program. You come in and work for a couple of years on this project or seven years on this one. We need to gear training, too." An HRM specialist at the General Services Administration noted that "managing employees through competencies instead of by tasks or position descriptions may be the answer." During focus groups discussions with IT professionals, one young federal IT professional summed up these issues by saying that he will leave the federal sector soon because, "everyday I am here I get dumber and dumber."

Outdated Classification System

The federal system for classification is expensive, inflexible, and out-of-date. The current federal classification system is based on a design for the world of work from the 1940s. In this era, jobs in every sector operated along an industrial model—a tightly organized, largely mechanized approach to work where jobs were precisely defined and the individual had little room to change the nature or scope of the job—picture a room full of clerks at typewriters.

The system—based as it is on an industrial model—makes very small distinctions between grades/levels and occupations. This means that classification standards used to define occupations and to distinguish between grades must be detailed. Such detail means lengthy standards; and such lengthy standards are expensive and time-consuming to prepare and maintain.

OPM has just prepared a new classification standard for IT professionals. This new standard replaces a standard issued in July of 1991, which replaced a standard issued in 1980. With an occupation such as IT, where the technology and approaches are changing so rapidly, every 10 years is inadequate. However, OPM does not have the resources to maintain standards more frequently. In fact, a review of all classification standards shows that no other standard or occupation has had as frequent updates as the GS-334 Computer Specialist series—3 times over 21 years. Yet, even this

extraordinary level of effort is insufficient in the new economy.

The industrialized approach to classifying jobs leads to inflexibility. Small distinctions in grades and occupations lead to distinctly defined positions. Such distinctly defined positions require detailed, lengthy position descriptions, which leave managers little flexibility to move people or reorganize functions to meet new demands or adapt to change. Such detail also translates to additional time and expense to prepare and maintain position documentation.

Consistent with an industrialized approach, the current classification system supports a hierarchical approach to performing work. Accordingly, to a large extent, higher grades (and, therefore, higher pay) are based on supervising and managing people. The more people supervised or managed, the higher the grade. This means that organizations frequently promote their best individual contributors to supervisory and/or managerial

positions as a means to pay them more and retain them longer, even though these individual contributors may not make the best managers. If this is the case, the organization loses a valued individual contributor and is left with an ineffective supervisor or manager. This hierarchical approach also results in organizations that are more bureaucratic and less able to respond to changing needs and conditions. Treasury describes this situation in its February 1999 report, *Responding to the Crisis in Information Technology Skills:*

"Outstanding technical employees need to be promoted along a separate career ladder and not moved into management as a way of providing them with deserved recognition and compensation. Changing this requires a review of Department and federal practices vis-a-vis career ladders and classification practices."[23]

PAY GAP

There are critical problems with the federal pay system. Current pay disparities with the private sector, overly narrow pay ranges, and the inadequacy of special pay rates are hampering the ability of agencies to compete for IT workers.

The annual salary survey conducted by *Computerworld* provides an index of the annual salaries paid out by various industries, including government (collectively at all levels) for specific IT jobs. The most recent survey results (for 2000) allow a comparison between the federal government's annual average salary and other industries for 15 entry-level jobs, 7 mid-level management jobs, and 8 senior management/executive positions. At the entry level, 7 out of the 15 jobs surveyed were at or slightly above the industry average. However, at the mid-level and senior management levels, there was not one position in which government met the industry average, with most positions falling significantly lower.

Table 2-4 provides a general assessment of the status of IT recruitment and retention practices of the various sectors included in the research. The level assignments (high, medium, or low) are based upon an overall evaluation of data and information obtained for organizations in each sector, in comparison to the other sectors. This table is meant to serve only as a general evaluation tool and does not attempt to account for successful individual practices.

The federal pay system, under Title 5, consists of 15 grades, each with a 30 percent range spread. Such a spread is considered narrow, since traditional salary management practice calls for a range spread of 20 to 25 percent for nonexempt factory position; 25 to 40 percent for nonexempt clerical; and 50 to 60 percent for professional through executive levels. More progressive practice, however, calls for even broader range spreads, typically with 100 percent differences between minimum and maximum pay levels, or more. Such narrow range spreads promote a hierarchical organizational approach and do not provide the tools to react to changes in the occupation or the labor market.

Within Title 5, the approach to address labor shortages is to apply special pay rates for an entire class of positions (i.e., classification series and grade). The problem is that classification series do not typically reflect the labor market, in which demand for certain specialties varies, so that one specialty may be hard to fill (and, therefore, require higher salaries to attract) while another may not. In a comparison of salaries for federal and private sector IT professionals in the Baltimore/Washington area, the project team found that the special pay rates may have eliminated the gap for a few IT occupations, reduced but not eliminated for most, and have created a substantial surplus for two.

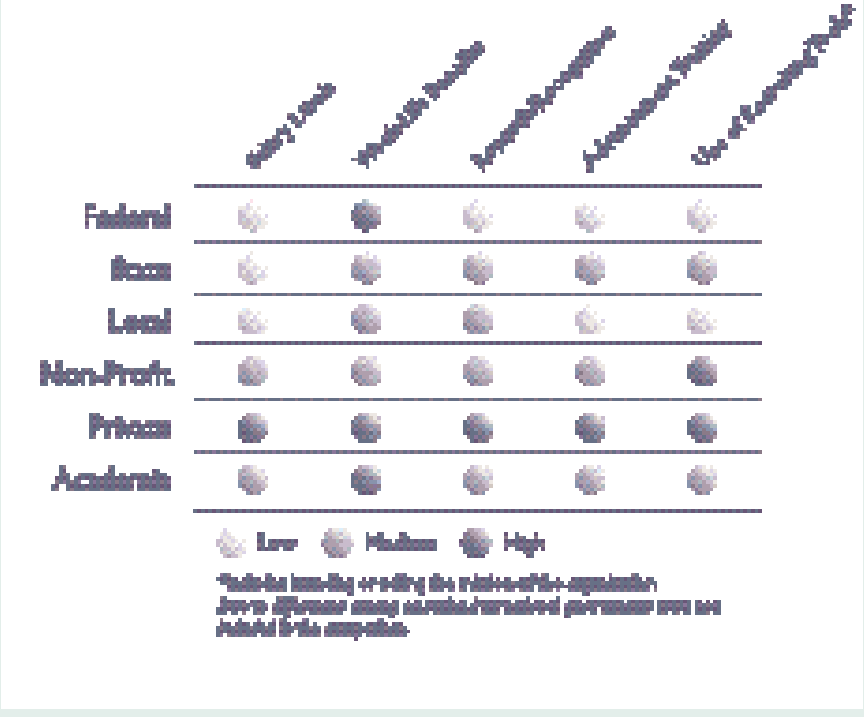
OPM's special pay rates also do not apply to IT professionals who are classified to a series other those chosen by OPM or those who are above the GS-12 grade level. Many agencies, for example, classify IT project managers or IT trainers, or IT requirements analysts to other series. In the research phase of this study, 8 of 19 executive branch agencies stated that special pay rates

are inadequate because they do not apply above the GS-12 grade level.

Another problem with the federal pay system is its inability to calculate how federal pay compares to pay in the rest of the labor market—is federal pay too much, too little, or just right? The comparison is complicated because it is not an apple-to-apple comparison. Federal jobs bring elements of value that private-sector jobs do not, such as security and stability. In developing a methodology for comparison for the Federal Employees Pay Comparability Act, federal pay was determined to be comparable if it was within 5 percent of the salary levels of non-federal employers. Even with this standard, there is not agreement among the experts. In testimony before the House of Representatives during the first week of May 2001, Mitchell Daniels, OMB director, stated that some experts calculate the gap at 21 percent, others prefer 32 percent, and some show a 17 percent gap.

Another component of this issue is the degree to which jobs are properly classified. Comparisons of federal-sector and private-sector pay are made based on the assumption that federal positions are correctly classified. Some experts believe that there is a high level of misclassification or overgrading. A high-level OPM official explained that OPM has not published any studies on the accuracy of classification in over 10 years and so cannot

TABLE 2-4
OVERALL COMPARISON OF COMPENSATION AND WORK FACTORS



definitively identify the degree of misclassification.

Nevertheless, the study team compared pay for federal IT professionals with pay for private sector IT professionals. The team compared actual salary data, using calendar year 2000 private-sector pay data with fiscal year 2001 federal sector pay data for the Baltimore/Washington area. The project team used the Baltimore/Washington area for two reasons:

- OPM workforce statistics show that 35 percent of all IT professionals in the federal government work in the Washington/Baltimore area. This is by far the highest concentration of IT professionals in the federal government.
- The Human Resource Association of the National Capital Area salary survey is an established, well-respected survey with input from over 240 companies.

To take into account OPM's special pay rates that became effective in January 2001, the team extrapolated private-sector data by increasing 2000 pay rates by seven percent. Seven percent reflects the average annual percentage increase for IT professionals in the private sector between 1996 and 2000. The assumption is that current market pay levels would be seven percent higher that the levels reported in the survey.

In reviewing the results of this comparison, which are shown in Table 2-5 on the following page, one can conclude that there has been some reduction in the pay gap during the past year between federal-sector and private-sector IT professionals, in the Baltimore/Washington, D.C. area. However, of the 12 IT specialties covered in Table 2-5, federal pay lags behind the private sector for 8 specialties; is about equal for 1; and is higher for 3 of them. The largest negative pay disparity is 15.7 percent for Analyst/Programmer I. The largest positive pay disparity is 17.3 percent for Senior PC/Network Support Specialist.

A system that has these types of pay disparities whether positive or negative, cannot be considered an effective motivator for superior performance. Nor can it be considered a wise investment of taxpayer dollars.

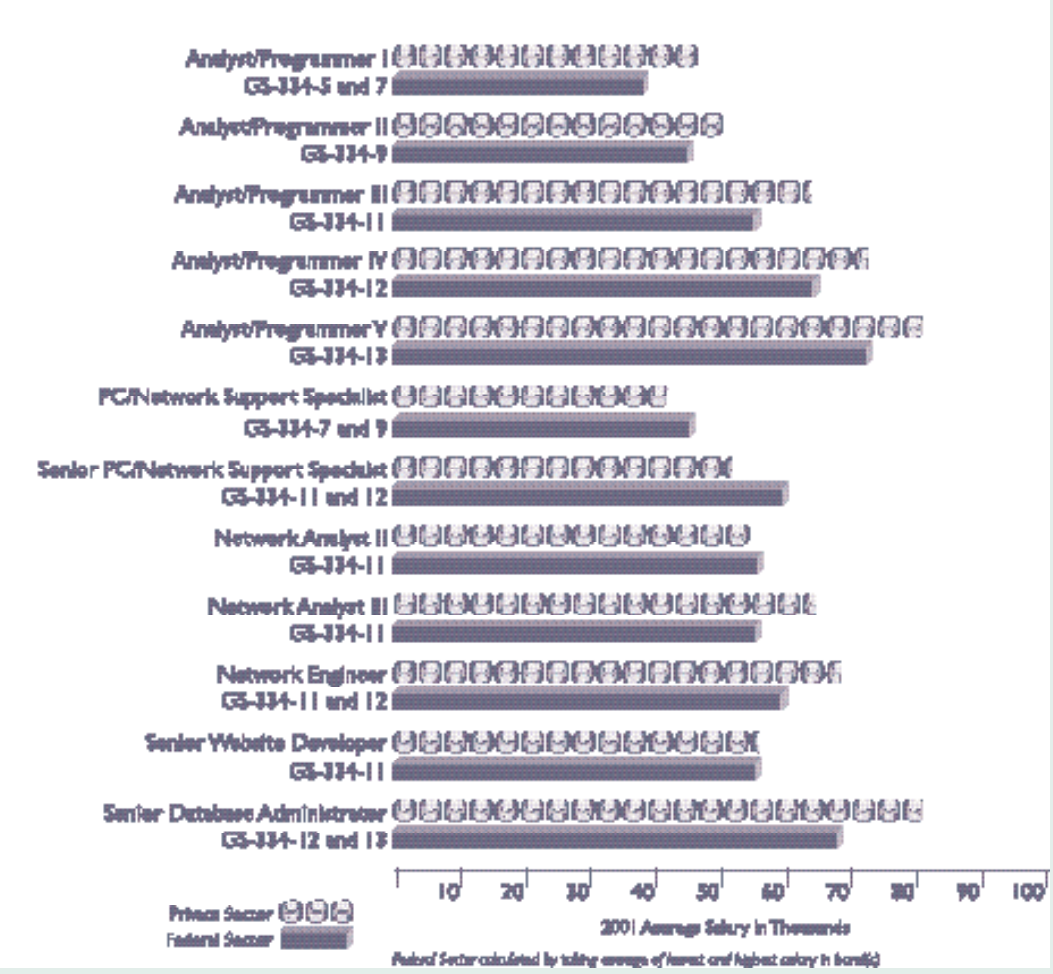
Conclusion

There are many components that contribute to the current and future problems in the federal community of IT professionals:

- a shortage of qualified IT professionals
- an aging workforce with inappropriate turnover
- a cumbersome recruitment process
- inadequate tools to motivate employees
- a lack of investment in continuous learning
- an outmoded classification system
- a pay gap

TABLE 2-5

COMPARISON OF PRIVATE-SECTOR AND FEDERAL-SECTOR IT SALARIES
CALENDAR YEAR 2001, BALTIMORE/WASHINGTON AREA



If these issues are not addressed the federal government is at risk in effectively managing its $150 billion investment in IT. Without effective tools to attract, manage, and retain IT talent, the federal government is in jeopardy. Every agency relies on the IT professionals in their organization in order to accomplish their mission. In the next 10 years over 30,000 IT professionals will retire and over 16, 000 new positions will be created. It is imperative that the U.S. government be able to attract the best qualified candidates to fill these mission critical vacancies. With such a huge investment and agency missions at stake it is imperative that the federal government begin to implement the systems that will make the government successful.

CHAPTER 3

ALTERNATIVE HRM COMPENSATION SYSTEMS

The federal government is severely limited in its ability to compete for highly qualified candidates in at least some occupations and geographic areas. A relatively inflexible compensation system that is still insufficiently sensitive to labor market forces is part of the problem.

John Palguta
Merit System Protections Board
Issues of Merit
December 2000

The project panel considered two different models for improving the effectiveness of the federal HRM system as it relates to IT professionals. While any number of models are possible, the two models described in this chapter cover the two basic approaches to improving the federal government's ability to recruit and retain qualified IT professionals. Model One makes minimal changes to the current system to achieve slight improvements, thereby making fewer demands on agencies' readiness for change. Model Two makes substantial changes to the current system to achieve more comprehensive improvements. Because of these

substantial changes, Model Two makes more demands on agencies' readiness for change.

Summary of Two Models of Alternative Pay Systems

The two models of alternative pay systems covered in this chapter are the Modified General Schedule (GS) and the Market-Based System. They represent two different approaches to pay for IT professionals in the federal government:

Model One, or the modified General Schedule, makes limited changes to the grade and salary ranges while maintaining all other existing elements of the current GS system. This model contains all pay provisions as now exist, including locality pay and special pay rates. It also includes all bonus provisions, such as relocation bonuses, recruitment bonuses, and retention bonuses; and provides for an increase in the pay cap. Modifications are made to increase flexibility within the GS pay bands by either eliminating steps within grades; and/or combining two or more GS grades into one broad grade or band. By eliminating steps, one eliminates periodic step increases that are now largely automatic. In this model, funds formerly used for step increases are now used for increases tied to performance. By combining two or more GS grades, pay bands are somewhat wider. In either case, managers would have more flexibility to set starting pay or to increase pay

Management has little or no flexibility in the current system. Pay increases are dominated by an annual across-the-board increase that is supposed to be linked to the employment cost index.

based on performance and/or acquisition of new or higher level competencies.

Model Two, or the market-based system, includes market-based pay and broad pay ranges or bands, makes major changes to the current HRM system to reflect the market, increases management and organizational flexibility, and places an emphasis on performance and competencies. In addition, Model Two incorporates a dual-ladder approach to avoid a separate grade structure/pay band between individual contributors and supervisors/managers.

CURRENT SYSTEM

The majority of IT professionals in the federal government are currently covered under human resources management systems and regulations outlined in Title 5. Under Title 5, positions are allocated to one of 16 grade levels (15 GS plus the Senior Executive Service) based on detailed criteria outlined in classification standards. Pay is linked to the 16 levels, and pay ranges are very narrow. In addition to narrow pay ranges, each of the GS pay ranges is divided into 10 steps.

Pay scales are supposed to be maintained based on the employment cost index. However, this process has lost credibility since the mid 1990s so that today the process for maintaining pay scales is largely political. In addition, OPM is authorized to establish "special pay rates," higher rates of basic pay for an occupation or groups of occupations nationwide or in a local area based on a finding that the government's recruitment efforts are significantly handicapped due to pay inequities. Currently, special pay rates are established for a large percentage of IT professionals.

Management has little or no flexibility in the current system. (see Table 3-1) Pay increases are dominated by an annual across-the-board increase that is supposed to be linked to the employment cost index. In addition to the annual across-the-board increase, IT professionals are eligible for periodic step increases (annual for first three steps; every two years for steps four through six; every three years for remaining steps) and performance-based pay increases. Starting pay is

TABLE 3-1
KEY ELEMENTS OF THE CURRENT SYSTEM

ELEMENT	GENERAL SCHEDULE SYSTEM
Base Pay	Current General Schedule system with 15 grades. Ten steps within each grade. Different pay schedules based on localities as now defined. Special pay rates as provided for by OPM (currently cover GS-334 series, grades 5 through 12).
Lump Sum or One-Time Pay	Various lump sum pay features, including recruitment bonuses, retention bonuses, relocation bonuses. Various performance-based bonuses as now exist.
Classification	Traditional classification tools and approach as now exists for general schedule system, including new GS-2200 classification standard. Different series based on OPM series definitions. No provision for specialties as now defined throughout IT profession.
Framework for Salary Management	Grades and steps as currently defined. Special pay rates, locality pay, and other adjustments to salary scales based on current mechanisms. Annual step increases based on longevity and satisfactory performance. Annual across-the-board increases based on Employment Cost Index. Pay cap set at Executive Level IV ($125,700 in calendar year 2001).
Market Alignment	Focus on internal alignment with other general schedule positions/occupations. No specific alignment to the market, except for special pay rate provisions. Salary schedules for different geographic locations as now defined.
Setting Starting Salary	Starting salary would be set according to current regulations and procedures. These call for hiring at step one of grade, however, hiring above first step is provided for under superior qualifications appointments.
Maintaining Salary	Periodic step increases through step 10. Annual across-the-board increases through existing mechanism. Non-competitive promotions within the career ladder based on time-in-grade and satisfactory performance.
Other Cash Compensation (Bonuses)	Relocation bonuses, recruitment bonuses, retention bonuses, and performance-based bonuses awarded according to current mechanisms. OPM has just made provision for referral bonuses.
Competencies	System does not provide link between grade/pay and competencies.

set at the first step of the grade for which an incoming IT professional qualifies with two exceptions. For employees with a current/past federal position, agencies are authorized to set starting pay at the highest previous rate; although, this is not relevant if the employee is coming into a promotion. For individuals with no federal experience, agencies can set starting pay above step one based on superior qualifications.

A variety of bonuses or lump-sum payments are available, including bonuses/allowances for recruitment, relocation, and retention.

Employees are hired as career, or career conditional for those who have not completed their probationary period. Once an employee's career status is conferred, the burden is on the manager or organization to terminate that person based on performance or disciplinary problems. In fact, the process is considered so cumbersome that very few managers or organizations will expend the resources to effect a termination.

Overview of Model One

Model One makes limited changes to the grade and salary ranges while maintaining all other existing elements of the current GS system. This model contains all pay provisions as now exist, including locality pay and special pay rates. It also includes all bonus provisions, such as relocation bonuses, recruitment bonuses, and retention bonuses; and provides for an increase in the pay cap. Table 3-2 provides an overview of the Model One Proposal.

Modifications are made to increase flexibility within the GS pay bands by making one or more of the following changes:

- eliminating steps within grades
- combining two or more GS grades into one broad grade or band

Under this model, periodic step increases that are now largely automatic would be eliminated. Funds formerly used for step increases would be used for

TABLE 3-2
KEY ELEMENTS OF MODEL ONE PAY AND CLASSIFICATION SYSTEM

MODIFIED GENERAL SCHEDULE SYSTEM	
ELEMENT	**ELIMINATE STEPS**
Base Pay	Current General Schedule system with 15 grades. No steps within each grade. Different pay schedules based on localities as now defined. Special pay rates as provided for by OPM (currently some GS-334 series, grades 5 through 12).
Lump Sum or One-Time Pay	Various lump sum pay features, including recruitment bonuses, retention bonuses, relocation bonuses. Various performance-based bonuses as now exist.
Classification	Traditional classification tool and approach as now exist for general schedule system, including new GS-2281 classification standard. No specializations other than broad series defined by OPM (i.e., Computer Specialist, Software Engineer, and Computer Scientist).
Framework for Salary Management	Grades as currently defined. Special pay rates, locality pay, and other adjustments to salary scales based on current mechanisms. Annual across-the-board increase based on employment cost index. No annual step increases based on longevity and satisfactory performance. Rather, annual increases to pay performance-based and/or competency-based. Pay cap increased.
Market Alignment	Focus on internal alignment with other general schedule positions/occupations. No specific alignment to the market, except for special pay rate provisions. Salary schedules for different geographic locations as now defined.
Setting Starting Salary	Because the system eliminates steps within grades, starting salary could be set anywhere within the pay range for the given grade. Managers would have authority to set starting pay, with commensurate salary budget responsibility.
Maintaining Salary	Annual across-the-board increases through existing mechanism. Within grade increases in pay would be based on performance, acquisition of new or higher level competencies, or both, as each agency's system. Non-competitive promotions and/or acquisition of new or higher level competencies.
Other Cash Compensation (Bonuses)	Relocation bonuses, recruitment bonuses, retention bonuses, and performance-based bonuses awarded according to current mechanisms.
Competencies	System provides a link between grade/pay and competencies.

COMBINE GRADES AND ELIMINATE STEPS

Combine some of the grade levels of the current General Schedule (pictured). No steps within grade/combined grades. Different pay schedules based on localities as now defined. Special pay rates as provided for by OPM (currently cover GS-334 series, grades 3 through 12 or equivalent).

Same.

Same.

Grades as currently defined are combined to provide for wider pay ranges. All other provisions the same

Same.

Because the system combines some grades and eliminates steps, there is potentially an even broader pay range to consider when setting starting salary. All other provisions the same.

Same.

Same.

Same.

increases tied to performance. By combining two or more GS grades, pay bands become somewhat wider. In either case, managers would have more flexibility to set starting pay or to increase pay based on performance and/or acquisition of new or higher level competencies. Non-competitive promotions would also be based on performance and/or acquisition of new or higher level competencies. Figure 3-1 explains the Model One Compensation system.

To provide overall direction on competencies, Model One includes a federal–wide competency framework. This framework identifies the competencies required by IT specialty at each grade level and would provide clear career development guidelines for the IT professionals who are a part of the system. Agencies could use the framework as it is or could—at their own discretion—add more details to the competency framework to fit their own approaches, resources, and program requirements.

Model Two: Market-Based System

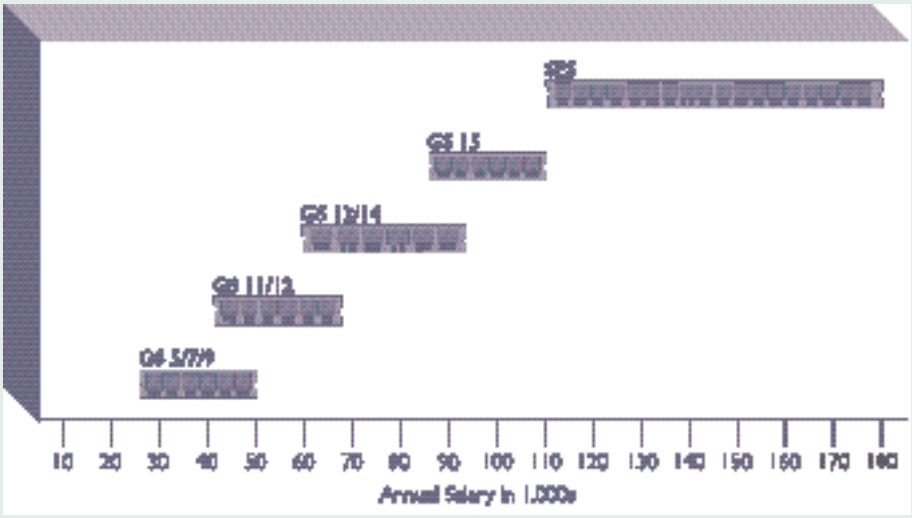
Model Two is a market-based pay system with broad pay ranges or bands. Under Model Two, management and organizational flexibility would be vastly increased by focusing on performance and competencies and eliminating traditional classification and qualification standards, completely eliminating any across-the-board pay increases, and providing a variety of pay-related tools. This system would require major changes to the structure and management of IT professional positions, pay, and appointing authority. In addition, Model Two incorporates a dual-ladder approach to *avoid* a separate grade structure/pay band between individual contributors and supervisors/managers.

As shown in Table 3-3, the system would consist of four levels or grades, with a broad pay range associated with each level. The four levels are:

1. Entry
2. Developmental/Technical Supervisor
3. Full Performance/Analytical Supervisor
4. Expert/Manager

Under Model Two, pay ranges for each of the levels would be determined through an annual salary survey of similar positions in various industries and in various geographic locations. Salary increases and promotions would be based solely on acquiring new or higher-level competencies and on performance. Individuals would be appointed under the excepted service, eliminating the type of job

FIGURE 3-1
MODEL ONE MODIFIED GENERAL SCHEDULE



Note: Pay for the SES level would be capped at the salary level of the Vice President.

MODEL ONE TOTAL REWARDS

- Base Pay
- Lump Sum Pay
- Continuous Learning
- Streamlined Recruitment and Branding
- Flexible Benefits with Pre-tax Dollars
- Increase the Pay Cap

LUMP SUM PAY

- Relocation Bonuses
- Recruitment Bonuses
- Retention Bonuses
- Performance Awards
- Referral Bonuses

CHANGES TO PAY

- Annual across the board increases
- Increases for performance
- Increases for competencies
- Promotions

SYSTEM TOOLS, POLICIES, AND PROCEDURES

- Classification Series and Standards
- Qualification Standards
- Competency Framework
- Performance Measures/Standards

TABLE 3-3
MODEL TWO PAY RANGES

Model Two Level	GS Level(s)
Entry	GS-5/7
Developmental/Technical supervisor	GS-9/11
Full Performance/Analytical supervisor	GS-12/13
Expert/Manager	GS-14/15 and SES

security that is characteristic of career and career-conditional appointments. However, the trade-off is market-based cash compensation and salaries.

Individuals in this system would be paid base salaries that are within the competitive ranges. Starting pay for individuals would be based on their specific experience and competencies. Since there would be no steps or similar divisions within a pay band, managers—with some restrictions—would be able to set starting pay anywhere within the band.

Model Two includes no automatic regular pay increases. This means that there would be no across-the-board increases, no longevity increases, and no cost-of-living increases. All increases to pay would be awarded based on competencies and performance/results. In addition, this system includes a variety of bonus options, such as recruitment bonuses, retention bonuses, and "scarce skills" bonuses that have proven to be effective in attracting and retaining qualified IT professionals. Within guidelines established by the overall system and/or by each agency, managers would have the authority to set starting pay and to determine specific amounts for bonuses.

As with Model One, Model Two includes a federal-wide competency framework. This framework would identify the competencies required by IT specialty at each level of the system and would provide clear career development guidelines for the IT professionals who are a part of the system. Agencies could use the framework as it is or could—at their own discretion—add more details to the competency framework to fit their own approaches, resources, and program requirements. Competencies would be updated to reflect new requirements, technologies, and practices in the occupation. Agencies would have discretion in setting up and administering their training, education and development programs.

Model Two Grade Levels and Pay Ranges

The pay system under Model Two consists of four levels, each level linked to a GS grade level. This is done based on an analysis of the classification definition of each GS-level and how this definition fits into the scheme of the Model Two levels.

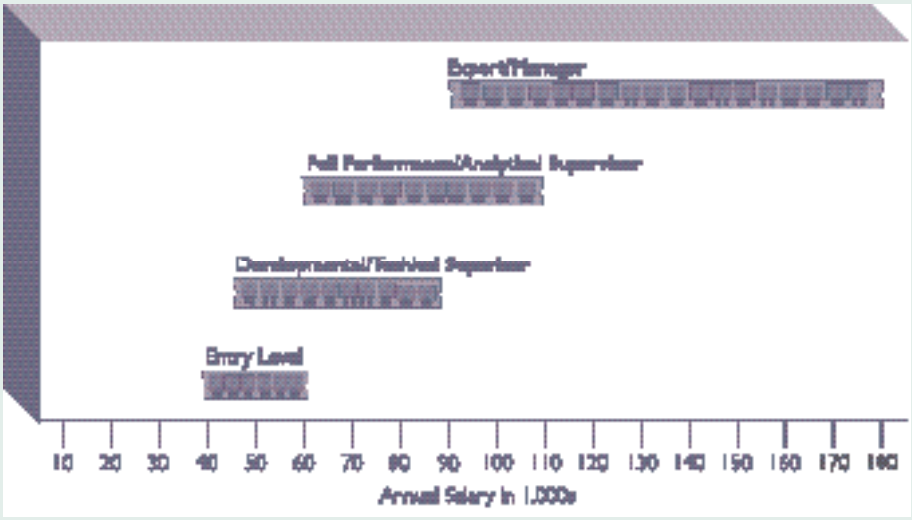
Pay ranges for each of the Model Two levels are broad. These pay levels are calculated using calendar year 2000 pay data for IT professionals in the private sector in the Baltimore/Washington, D.C. area. This pay data is presented according to a number of IT specialties. These specialties, and how they are linked to their equivalent GS series and grade, are listed in Table 3-4. Linking to the GS grade is done using two different approaches: (1) based on information provided by the salary survey that links specialties and

TABLE 3-4
MODEL TWO SALARIES

PRIVATE SECTOR SPECIALITY AND LEVEL	EQUIVALENT GS GRADE	LOW SALARY*	AVERAGE SALARY*	HIGH SALARY*
Analyst/Programmer I	GS-5/7	32.5	43.0	58.5
Analyst/Programmer II	GS-9	39.7	51.0	64.0
Analyst/Programmer III	GS-11	46.0	58.0	71.5
Analyst/Programmer IV	GS-12	56.7	67.0	79.6
Analyst/Programmer V	GS-13	64.0	74.8	87.0
Sr Computer Systems Analyst	GS-12	53.5	65.6	80.5
Lead Computer Systems Analyst	GS-13/14	62.9	77.2	92.0
Systems Programmer	GS-11/12	52.3	46.0	65.2
Senior Systems Programmer	GS-12/13	46.0	61.1	79.0
PC/Network Support Specialist	GS-7/9	30.0	36.0	48.0
Sr PC/Network Support Spec.	GS-9/11	37.1	47.5	60.1
PC/Network Support Supv.	GS-11/12	47.7	61.9	85.0
Network Engineer	GS-11/12	47.3	63.6	81.9
Website Content Manager	GS-13/14	40.0	57.9	78.7
Internet/Intranet Administrator	GS-11	38.5	51.6	67.6
Website Developer	GS-11	32.5	47.0	62.7
Senior Website Developer	GS-12/13	38.1	51.5	71.9
Database Administrator	GS-9/11	40.1	56.4	74.6
Senior Database Administrator	GS-12/13	60.5	75.1	90.5
Computer Software Analyst	GS-9	34.4	44.1	55.0
Sr Computer Software Analyst	GS-12	46.1	60.4	75.2
Chief Information Officer	GS-14/15	75.0	117.1	181.1

*"000's

FIGURE 3-2
MODEL TWO MARKET BASED SYSTEM



Note: Pay for expert/manager level would be capped at the salary level of the Vice President

MODEL TWO TOTAL REWARDS

- Base Pay
- Lump Sum Pay
- Continuous Learning
- Streamlined Recruitment and Branding
- Flexible Benefits with Pre-tax Dollars
- Work/Life Balance
- Increase the Pay Cap

LUMP SUM PAY

- Relocation Bonuses
- Recruitment Bonuses
- Retention Bonuses
- Performance Awards
- Referral Bonuses
- Scarce Skills Bonuses

CHANGES TO PAY

- Increases for performance
- Increases for competencies
- Promotions

SYSTEM TOOLS, POLICIES, AND PROCEDURES

- Occupational Specialties
- Short, Generic Specialty/Level Descriptions
- Annual Market Pay Survey
- Competency Framework

levels to their equivalent GS grade; and (2) based on a comparison of the description of the duties and scope of responsibilities for each specialty/level to the latest OPM classification standard *(Job Family Position Classification Standard for Administrative Work in the Information Technology Group, GS-2200).*

Based on these analyses, each specialty/level (i.e., Analyst/ Programmer I) is assigned to one of the four broad levels/bands for Model Two. Then, the pay range of each band is defined to encompass the range of salaries, starting with entry pay levels, for jobs assigned to the band. If the federal bands are similar to the most prevalent corporate model, the bands would be 100 percent from the minimum to the maximum.

Figure 3-2 illustrates the key features of the market-based system under Model Two.

Treatment of Supervisor and Management Positions in Model Two

Model Two avoids having a separate structure/band for supervisors and managers. Such an approach is referred to as a dual ladder—with one identical ladder covering both individual contributor positions (i.e., non-supervisors and non-managers); as well as supervisory and managerial positions. By establishing a dual ladder, key individual contributors are not forced into management jobs for higher pay. In the current system, promoting key contributors into management positions is a critical problem, as discussed earlier in this report (see page 30).

Under this dual ladder approach, supervisory and managerial work is treated just like other IT specialties. Basic levels of supervisory and managerial jobs are defined and

assigned to the levels (or pay bands). For example, the position that functions as the supervisor over the help desk function, might be a part of the IT Supervisor Level I specialty. This specialty, because it directs a relatively low-level function, might be allocated to the "Developmental/Technical Supervisor" level/pay band.

TABLE 3-3
KEY ELEMENTS OF MODEL TWO PAY AND CLASSIFICATION SYSTEM

ELEMENT	MARKET-BASED SYSTEM
Base Pay	Market-based pay with four non-supervisory levels (entry, developmental, full performance, expert) and one management level. Each level covers a broad pay range. No steps.
Lump Sum or One-Time Pay	Full range of lump sum pay features, including recruitment bonuses, retention bonuses, relocation bonuses, "scarce skills" bonuses, and performance-based bonuses.
Classification	Elimination of classification as now exists. Replace classification standards with short (less than one page), generic lists of duties by various specialty areas and levels, as now used in private sector. Replace series with specialty areas. Pay cap increased.
Framework for Salary Management	Four levels for individual contributor and one level for management. Each level has broad pay ranges. No steps. No across-the-board increase.
Market Alignment	Balance between external alignment with similar positions in the market and "contribution" alignment. Annual salary survey to provide basis for adjusting pay levels and retaining market alignment. Salary schedules for different geographic locations, as appropriate based on market.
Setting Starting Salary	Hiring manager has authority to set starting salary, with pay guidelines established according to annual salary surveys and specified criteria for setting starting pay substantially above the guidelines. In addition, agencies could establish their own guides and criteria within this federal-wide framework.
Maintaining Salary	All salary increases are based on competencies and performance/results. No steps; no annual across-the-board increase. Increases within the same band based on acquiring competencies and performance results. Non-competitive promotions through full performance level (within the career ladder) based on competencies and results.
Other Cash Compensation (Bonuses)	Hiring manager has authority to determine which bonuses apply and amount of bonus. Bonus guidelines established according to annual salary surveys as well as any agency-specific guides. Premium skills bonuses only apply if skill is mission-critical.
Competencies	Employees must acquire new or more advanced competencies in order to get salary increases and promotions; or performance and contributions must warrant movement.

Comparison of Three Pay Systems for IT Professionals

Table 3-3 summarizes the key features of the three pay systems for IT professionals. These three systems include the current system, the Model One Modified General Schedule System, and the Model Two Market-Based System.

TABLE 3-4
COMPARISON OF THREE PAY SYSTEMS FOR IT PROFESSIONALS

SYSTEM FEATURES	CURRENT SYSTEM	MODEL ONE–MODIFIED GS	MODEL TWO–MARKET-BASED
Type of Appointment	Career/Career-Conditional	Career/Career-Conditional	Excepted Service; NTE Date
Grade Levels	9 total; 9 GS and 1 SES	As many as 9 or as few as 5	5
Documentation for Grade Levels	Classification Standard	Classification Standard	Short, Generic Descriptions
Competency Framework	No	Yes	Yes
Distinct IT Specialties	No	No	Yes
Qualification Criteria	Years of specialized experience	Years of specialized experience	Competencies
Pay Ranges	Narrow Bands/10 Steps	Medium Bands/No Steps	Wide Bands/No Steps
Pay Cap	Capped at Executive Level IV	Increase Pay Cap	Increase Pay Cap
Mechanism for Maintaining Pay Ranges	Employment Cost Index; Special Pay Rates established as exception by OPM	Employment Cost Index; Special Pay Rates established as exception by OPM	Annual Salary Survey
Setting Starting Pay	At first step except for Superior Qualification Appointments and Highest Previous Rate Appointments	Anywhere in pay band, with guidelines	Anywhere in pay band, with guidelines
Automatic Pay Increases	Annual	Annual	None
Periodic Step Increases	Yes	No	No
Competency-Based Increases	No	Yes	Yes
Performance-Based Increases	Yes/Low	Yes/Medium	Yes/High
Link between Pay and Performance	Low	Medium	High
Link between Pay and Competencies	None	Medium	High
Leverage Competencies for Attracting and Retaining Candidates	Variety; none for "scarce" skills	Variety; including for "scarce" skills	Variety; including for "scarce" skills
Leverage Competencies for Rewarding Candidates	Yes	Yes	Yes
Streamlined Recruitment Process	No	No	Yes
Branding for Recruitment	Possible	Possible	Possible
Benefits Covered with Pre-Tax Dollars	No	Yes	Yes
Flexible Benefits	No	Yes	Yes

CHAPTER 4

RECOMMENDATIONS

"My mantra is, you need compensation reform. The General Schedule – with its 15 grade levels and steps in each grade– needs to be replaced. . . Fifty years ago Congress wanted central controls and pay equity for employees! But the nature of federal work has changed, and the practice of handing out a generic pay raise once a year to 1.8 million employees is an anachronism. The current system is not conducive to managing the federal workforce. . . The one size fits all system is not market sensitive and cannot react to a year when technology workers . . . are difficult to hire and can accept private sector job offers at higher starting salaries. . . Too often . . . employees fail to separate the issue of pay structure from pay rates. It is the structure that is broken, and fixing the structure need not result in dramatic or budget busting pay raises for employees."

If he could start with a clean slate. . . he would build the federal pay system around occupations that account for most of the government's work. That approach. . . would allow for . . . all technology workers to receive equitable treatment. In effect each of the several broad groupings of federal occupations could have its own pay schedule and rationale.

Romero would tie the occupational groups to the market place. . . "The solution is to devise a structure that allows for different approaches to pay. . . . The goal should be to measure changes in wage markets and make pay decisions on what the market dictates and what agency budgets can afford."

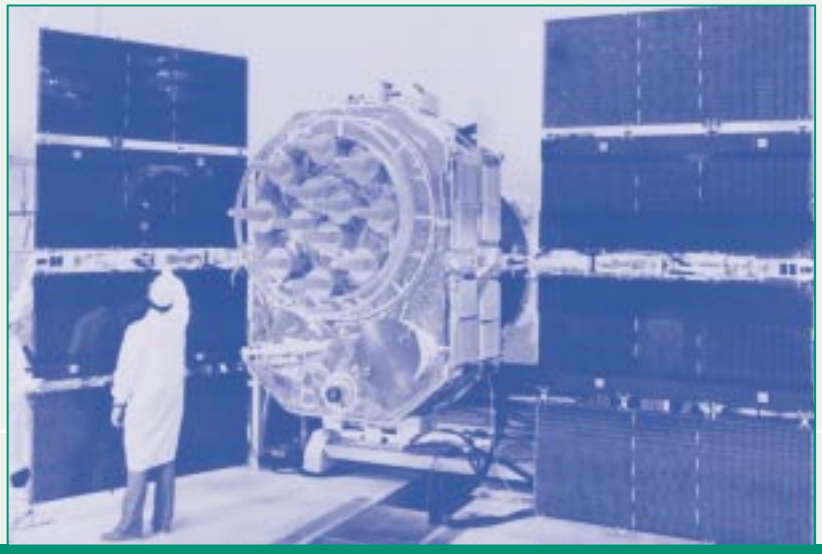
Interview with Henry Romero
Former Associate Director for Compensation, Office of Personnel Management
Stephen Barr
The Washington Post
May 22, 2001

Creating an organization that lures qualified talent is all about marketing the enterprise's culture, spirit, imagination, technology, opportunities and leadership. Leading-edge enterprises define the IT professional markets they want to attract and then build a product (the enterprise) and recruitment campaign that appeals to the target market. They understand strengths and weaknesses not only of the work they offer but also of the environment, culture and management team.

Many IT professionals will willingly work on interesting and intricate problems that flex their analytical muscles. If they like their co-workers and feel reasonably well paid—even if they are paid 10 percent to 15 percent less than someone down the street—they are likely to stay. If their experience and assignments boost their employability, all the better. Survey results back that up. According to the 1999 *IT Market Compensation Study,* published by People3, a GartnerGroup company:

- 83 percent of IT professionals seek a challenging technical environment
- 77 percent seek market based pay
- 68 percent seek strong leadership
- 68 percent seek flexible work hours
- 65 percent seek career development opportunities

Building a Compelling Place to Work: New Heights in IT Human Resources Management
GartnerGroup
April 5, 2000



RECOMMENDATIONS

The project panel recommends that the federal government transition to Model Two's market-based HRM system for IT professionals. This compensation approach would establish broad pay ranges, tie base pay to market rates, link increases in pay to competencies and results, completely eliminate any across-the-board increase to pay, and provide a variety of pay-related tools—bonuses—to attract and retain IT talent. The approaches described under the market-based system are not new concepts and practices for the private sector. They are, however, new to much of the federal sector and to federal-sector managers, IT professionals, and HRM specialists. Therefore, managers, staff, and HRM specialists will need training and time to understand the changes and to be able to work effectively using these new tools.

Because of the move from a career/career-conditional appointment to an excepted appointment, GS employees may feel as though they are giving up too much in terms of security and stability. Accordingly, the panel proposes that the transition work something like the move from the Civil Service Retirement System to the Federal Employees Retirement System: all current employees would be given the choice to stay in the GS or to move to the market-based approach. Those who stay would receive the same total compensation treatment as the rest of the GS. All new employees would be placed in the market-based system.

Successfully competing for and managing IT talent in today's market requires a comprehensive, integrated HRM system. An effective HRM system for IT professionals must give careful attention to a variety of pay and non-pay issues. Such a

system must accomplish the following:

1. establish a market-based, pay-for-performance compensation system
2. allow for flexibility in the treatment of individuals and occupations
3. improve recruiting and hiring processes
4. balance the three dimensions of equity
5. offer competitive benefits
6. promote work/life balance programs
7. encourage management ownership
8. support technical currency and continuous learning
9. build in reliability, clarity, and transparency
10. implementation

1. Establish a Market-Based, Pay-for-Performance Compensation System

The federal government should adopt a market-driven, pay-for-performance system to determine base pay, performance-based incentives, and appropriate pay adjustments/increases for IT workers. The new system must narrow the pay gap between the compensation of private- and public-sector IT workers.

An effective compensation system for IT workers offers rewards based on merit or contribution, not longevity or tenure.

Incorporates Performance-Based Approaches

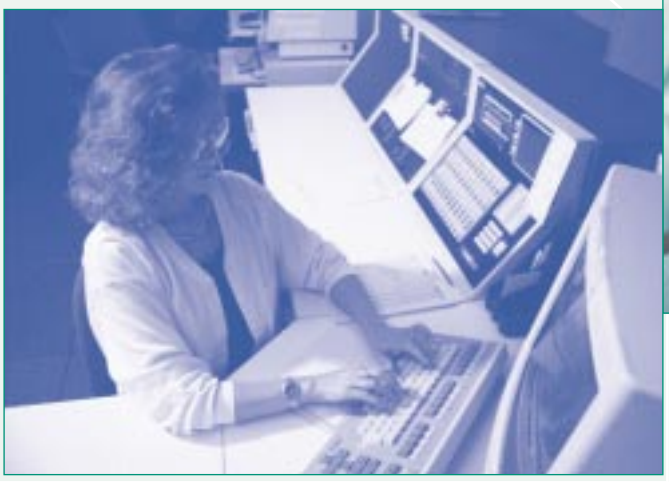
IT professionals want to work in an environment where they earn their promotions and pay increases based on their contributions and performance. Federal agencies should reinforce a culture where individual and/or team performance is seen as an agency priority. Agency performance planning, measurement, and management systems should recognize high performers with financial and other rewards while providing feedback to those employees who have not achieved expected levels of success.

An effective compensation system for IT workers offers rewards based on merit or contribution, not longevity or tenure. The federal compensation system for IT workers should base pay increases on an effective performance evaluation process that distinguishes the truly outstanding performers from those who are performing at less

impressive levels. This means that no more than perhaps 15 to 20 percent of covered IT professionals would fall at the top end of the spectrum, resulting in the highest pay increases and/or special bonuses (research supports the 15 to 20 percent range for distinguishing top performers). The majority of employees would likely meet but not consistently exceed expectations and would receive less in the way of financial rewards. The few who fail to meet expectations would in some cases receive no rewards. Federal managers may be unaccustomed to making these difficult decisions, but they must develop such skills if the new compensation system is to work effectively.

Pay-for-performance makes sense because:

- It is consistent with the stated goals of the Clinger-Cohen Act, which underlined the need to improve performance.
- It is consistent with trends in the IT labor market and with the goal of competing for well-qualified individuals. Pay-for-performance is virtually universal for exempt employees in the private sector.
- Pay-for-performance provides a proven method for managing and controlling salary costs.
- This approach can make the federal government more attractive to younger job candidates who, research shows, look for opportunities where they can test their skills and expect rewards for their performance.
- Experts in IT management contend that the best or star performers in IT are from 4 to 10 times as productive as the typical employee. The idea of paying star performers the same as less productive workers is an antiquated notion.



- A well-designed financial reward system will contribute to improved individual and team performance.

Provides for and Maintains Competitive Pay/Total Compensation

Annual adjustments are significant in any tight labor market and are seen as critical for the IT specialties considered as "premium skills" or for highly complex project management skills that can be so valuable to an agency. The current practice of making annual pay increases by making adjustments to the GS or by giving step increases should be changed or eliminated. Total compensation, including base pay, should instead be determined by the competitive range(s) of the relevant labor markets using specific IT market survey data. Private sector companies, as well as some state and local governments, rely on labor market surveys to assess the quickly changing IT job structure and prevailing pay levels against benchmarked job data. The results of this benchmarking drive the design and implementation of compensation approaches including broad pay ranges/bands, separate pay systems for IT professionals, pay differentials for special skills, pay adjustments based on one's contributions to the organization, and other compensation strategies.

2. Allow for Flexibility in the Treatment of Individuals and Occupations

The new compensation system should ensure that managers have the flexibility to pay individual workers for their respective skills and competencies as well as their contributions to the organization. The system should provide flexible salary ranges for recruitment and retention purposes. Pay differentials, adjustments, and increases should be based on what an individual brings to the organization as a whole or for specific mission-critical projects. This assessment should be predicated on the individual's skills as well as his/her performance on the job.

Managers should also be allowed the flexibility to make appropriate compensation decisions when recruiting, for example, for scarce technology or unique project management skills and in order to retain employees who possess skills in maintaining older, legacy systems. The compensation system should provide for agencies to use components or features that support each agency's specific mission and functions. The system should be planned to provide the "tools" commonly available in the private sector that help managers add and retain the skills needed to achieve near-term goals and to reward employees according to their contribution and market value. The job of the manager is to decide how the new system can best be used to support his/her mission.

An agency may prefer to emphasize recruitment bonuses, in addition to competitive pay, to be able to quickly hire candidates with highly specialized skills that are important to that agency's mission. Another agency may instead prefer to focus on mission-critical bonuses to retain employees who are needed for specific agency projects. The key is that each agency should have options from which to select that support its mission.

The flexible design of a new compensation system for the IT occupation should serve as a model for the rest of the federal government as well as other public- and private-sector organizations.

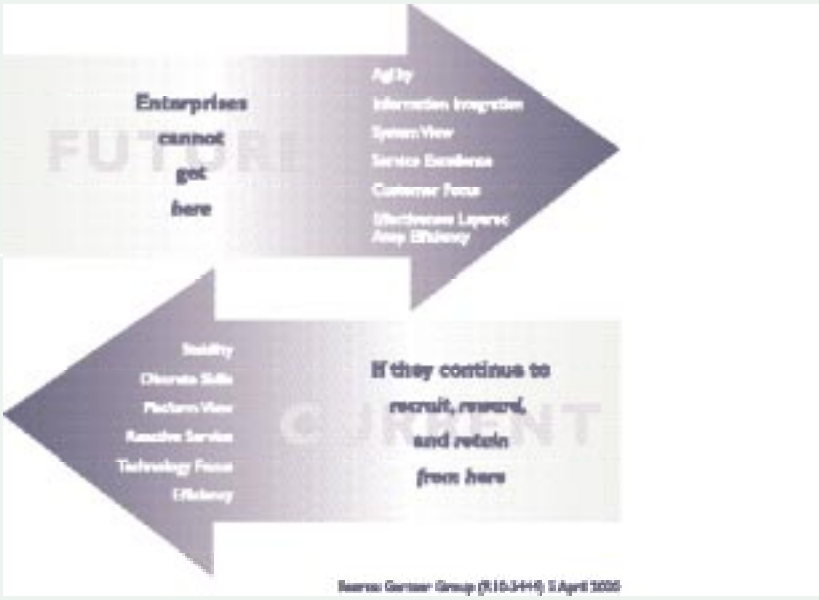
Finally, those organizations impacting the implementation of any compensation system must ensure that their implementing and operating procedures support the required flexibility. All too often, federal HR systems that are originally intended to provide for flexible implementation at the agency level become bound by agency-specific rules and requirements. If this happens to the new IT compensation system, it will fail.

The new compensation system should ensure that managers have the flexibility to pay individual workers for their respective skills and competencies as well as their contributions to the organization.

3. Improve Recruiting and Hiring Processes

The project team's research—including data from studies, interviews with IT and HR experts, and information from focus groups—confirmed that an organization's approaches to recruitment and hiring are key elements of an effective HRM system for IT professionals. The ability to target pay to the market should go hand-in-hand with a greater ability to quickly recruit and employ candidates with the appropriate skills and competencies. The new compensation system for IT professionals must be linked to faster, enhanced recruitment and hiring processes if the federal government is to attract the workers it needs.

In today's IT labor market, the approach an organization uses to recruit, the mechanisms for getting the message out, and the speed of



the process are the most critical elements of its ability to bring new employees on board.

Branding—or developing a market identity—is the latest approach to recruiting. Branding is the same approach that a company uses to market its products. It involves developing a clear identity and using all available outreach activities to promote that identity. Developing an identity includes more than just what the organization does and the specifications of vacant jobs. An identity also encompasses the character and value of the organization by highlighting what is important to that organization and to its employees.

The speed of the hiring process is the second key to redefining recruitment in the IT labor market. Private-sector companies with success in hiring IT candidates have explored and implemented ways of reducing the time in making hiring decisions and extending job offers. Many companies and public-sector organizations are attending job fairs and making job offers on the spot. Even when organizations do not make on-the-spot offers, they have instituted quick follow-up reviews back at the office followed by quick offers. The federal government's rules and regulations present real barriers in designing and implementing speedy hiring processes. Efforts to highlight the barriers and to recommend improvements include the recent Academy conference addressing recruitment and retention issues for hard-to-fill jobs. Results of the conference discussions, as well as other stakeholder input, can serve as guidance for legislative and regulatory changes.

Federal agencies, in conjunction with OPM, should ensure that hiring process barriers are identified and eliminated or minimized. They should also evaluate the capabilities of their hiring systems with the goal of quickly adapting them as needed.

4. Balance the Three Dimensions of Equity

A new federal IT compensation system should move to a better balance among internal equity, external equity, and contribution equity. In such a system, salary ranges would be truly market driven. Pay for new hires will be determined by the mix of competencies and skills that each individual IT hire brings, and by the market demand for those skills. In a more balanced system, federal IT workers comparative value would play a more important and determinant role in how they are compensated.

Given the historical significance that internal equity has played in the federal civil service, the new compensation system should be described in such a way that misunderstandings are minimized. If the new compensation system is to be successful, participants, managers, and other stakeholders will need to understand that a more balanced approach to equity will benefit everyone.

5. Offer Competitive Benefits

The federal benefits package for the average employee compares very favorably to benefits typically offered in the private sector. When the various plans are compared with those provided by other employers, it is always possible to identify instances where the level of the benefit is higher or the cost to the employee is lower. Government could improve its benefit package, as all employers could, but change would not significantly enhance its ability to compete for IT talent. The basic set of employer-provided benefits serves the following employee needs:

- paid time off, including vacations, holidays, and time for personal situations
- retirement income
- death benefits

- medical and health benefits
- income continuation benefits to protect employees if they become sick or disabled

In some areas, federal benefits are worth more than the typical corporate package; in others, corporations provide better benefits. The most comprehensive study of the federal benefits program, completed in 1997 by the Watson Wyatt & Company for the Congressional Budget Office, compared the value of federal benefits with those provided by 800 predominantly large corporations. The study revealed that the value of benefits depend on age, salary, and length of service, and could range from 26 percent to 50 percent of salary for federal employees and from 24 percent to 44 percent for the corporations.

The analysis compared federal employees under the CSRS and FERS retirement programs with their private-sector counterparts. The FERS retirement benefits were better than the corporate benefits at all age and salary levels. This included the combined benefits from TSP, the defined benefit plan, and Social Security. Sick leave and disability benefits along with holiday and vacation benefits were better for all federal employees. The comparison of health insurance plans provided mixed results, with the federal benefits better under some of the insurance plans offered in the "open season," although these benefits were offset by the higher required employee contributions.

However, for senior executives or professionals at the highest levels of their career ladders, federal benefits are not competitive with the private sector. Private employers typically provide supplemental benefits such as life insurance, retirement income, and stock ownership plans that as a total package tend to dwarf anything the government can offer. These senior executives offer the expert management and policy guidance that are critical in implementing complex IT programs across the federal system. Until the federal government can offer a more competitive benefits package for senior technical employees as well

as senior executives, it will not be successful in recruiting these individuals.

The stock ownership opportunities and rewards for IT executives, and in many cases all employees, in the private sector have been covered extensively by the business press over the past few years. This is clearly a benefit that the federal government will never be able to match. Of course, it has by now become obvious that stock value can be quickly lost.

Traditional benefits may not be as important to younger job applicants who are such an important segment in the IT labor market. For these workers, federal agencies could have an advantage if they emphasize in recruiting the more generous paid time off policies, the length of the workweek, and policies like flexible work hours and on-site child care.

Younger IT workers appear more interested in the cafeteria approach to benefits; i.e., they want to select those benefits most appealing to them as individuals and not be forced into contributing to a total benefit package that is "one size fits all". While the federal government does not offer the full flexibility of so-called cafeteria style benefit plans, those policies are under review and the open season for health insurance and the flexibility inherent in FERS provides some flexibility.

…for senior executives or professionals at the highest levels of their career ladders, federal benefits are not competitive with the private sector.

The importance of flexibility highlights the differences in individual needs for benefits depending on their age and family situation. The federal government has to balance its need to be competitive in recruiting new employees with its obligation to older workers. It also has to balance the possible value and cost of improved benefits with the need to improve base salaries.

6. Promote Work/Life Balance Programs

Research results from the first phase of this project consistently showed that IT workers value flexible work arrangements and other non-pay benefits, such as child care centers and subsidies; casual dress codes, and casual work environments. If pay is within a competitive range, these work/life programs can tilt the recruitment process in favor of the IT employers offering such programs. IT workers are interested in family-friendly benefits and HR policies that support a good working environment. They look favorably on employers who offer flexible benefits so that the individual can select which specific benefits are most appropriate to them at a given point in time.

As individuals spend more of their time working and as we see more and more two-income families, there is more emphasis on work/life programs and policies to improve the balance between work and private life and to create a friendlier environment in the workplace.

As a whole, the federal government offers excellent work/life programs to its employees. Many of these programs are just now being introduced or expanded in the private sector and in state/local governments. A recent survey by the Society for Human Resources Management explored the use of alternative work schedules and telecommuting by private-sector companies to attract workers for hard-to-fill jobs. The results of this survey indicate that approximately two-thirds of all private sector companies now offer one or both of these programs. However, many of these same companies do not allow workers to participate in both programs at the same time. This is not the case with the federal government. Federal agencies across the board offer flexible working schedules including flex-time and days off as well as expanding telecommuting or tele-working for its employees.

Many federal agencies also offer transportation subsidies to assist with commuting costs and many federal buildings offer free or low-cost parking for carpools and emergency needs. There are also numerous fitness centers located in federal buildings or supported off-site by federal membership. All of these initiatives are in line with what IT workers are seeking in the way of non-pay benefits.

Employee assistance programs are another important offering of federal agencies. They provide for individual and group support, including counseling, elder care assistance, and conflict resolution. Workshops provided on-site by federal agencies are comparable to what private industry offers, and in some cases even surpass them.

Financial planning is often a separate benefit offered by private-sector companies, while federal agencies usually include financial planning as part of retirement planning. This is one area that federal agencies should explore as a separate initiative since IT workers are particularly interested in financial planning.

Although federal work/life programs compare very favorable with the private sector, federal managers and HR specialists must actively market their benefits so that potential IT workers are aware of them. The benefits and aspects of the different programs should be clearly described in recruitment materials and advertisements.

Agencies should ensure that their work/life programs are flexible enough to provide for selection by employees according to individual needs, as long as accomplishment of agency mission is supported. Employees should be included in the evaluation of the various programs to determine which features are working most effectively and what changes may be necessary. Agency management should ensure that hiring managers and first-line supervisors are knowledgeable of the work/life programs.

In describing total compensation for the IT worker, work/life programs and non-pay benefits are often

overlooked. Yet, they are often viewed by workers as key indicators of how an organization feels about its employees. They are also effective recruitment and retention strategies that should be incorporated into any total compensation model or structure. While these programs are often what sells an IT worker on coming to a particular organization, lack of them can be what drives that same employee out of the organization. Federal agencies should take the time to re-assess their work/life programs to ensure that resources are leveraged to the maximum benefit, potential candidates are told about their offerings, and existing workers (including IT) are informed of their benefits.

7. Encourage Management Ownership

The role of supervisors and managers in a new compensation system cannot be overstated. Managers must actively participate in the design and implementation of agency-specific features of the new system. Their sense of ownership in the system and its processes is pivotal to their acceptance of accountability and change. Managers must also see advantages in the system for themselves. Managers must be rewarded for effectively implementing and managing the system. At the same time, managers who refuse to make the tough personnel decisions in setting pay, awarding bonuses, scheduling training, and mentoring, must be held accountable for not carrying out their managerial responsibilities.

Top leadership must set the stage for the culture change. Each agency must establish effective communication with their managers to ensure that the issues and messages of change management are shared. Agency leadership will be responsible for creating a climate where the new system is accepted and for providing the resources needed for training and coaching their managers. Agency leaders must ensure that a level of trust is instilled in their managers.

Agency managers must also focus on learning more about the values and needs of the IT worker, especially those from Generation X and Y. No longer can agency managers recruit and compensate IT workers with the intent of long-term employment. Managers must think in terms of attracting and retaining

IT professionals for specific projects or short-term arrangements. They must also ensure that once IT candidates are hired, they are immediately assigned challenging work and offered training and developmental opportunities. Managers who feel ownership of the compensation system will find it easier to make the decisions and differentiate among their employees in terms of salaries, performance ratings, pay increases, and promotions.

8. Support Technical Currency and Continuous Learning

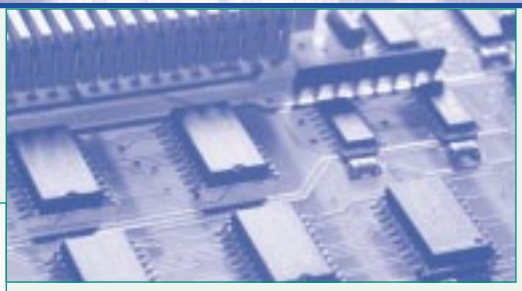
Technical currency and continuous learning are critical components of an HRM system for IT professionals. As the project team found in its research, IT professionals place high value on professional growth and on keeping their skills up to date. In fact, maintenance of professional credentials is among the top factors motivating IT professionals. Managers' ability to meet the desire of IT workers to keep their skills current with ever-changing technology is paramount in the design and implementation of any compensation system. Therefore, a continuous learning organization will have the edge on attracting and retaining IT professionals.

Technical Currency

Keeping the skills of IT workers up-to-date is the responsibility of both the employer and the employee. Agency management should design and support developmental activities through a number of vehicles including formalized training, on-the-job training, computer assisted learning, self-instructional guides, coaching, mentoring, and other approaches. Employees should, in turn, avail themselves of the opportunities and accept responsibility for their choices. Issues such as payment for courses, time off for training, and similar concerns should be resolved by the managers and employees working closely together to tailor a learning plan that supports the organizational and individual needs.

Continuous Learning

Continuous learning is defined by the American Society for Training and Development as everyone at every level making learning a part of the job. This approach to learning involves a comprehensive shift in



the way of thinking about work and learning. No longer does learning just occur when sitting in a classroom or when “taking” a computer-based training course. These approaches are too expensive, too time-consuming, and not always reflective of the way adults learn.

The way work is structured is the primary mechanism for continuous learning. Managers today make assignments based on the skill of the individual and/or team. These are called "skill assignments." In a continuous learning organization, managers make "learning assignments" as well as "skill assignments." Learning assignments are designed to allow the individual or team to learn by doing, which is the most effective adult learning approach. Learning by doing is also the least expensive way to maintain an up-to-date, highly skilled workforce of IT professionals.

The “learning assignments” approach works best when managers and supervisors also function as coaches; and when mangers and supervisors leverage the knowledge that already resides in the organization. This knowledge must be identified and directed to the right places and shared at all levels. Experts, full performance-level staff members, existing IT resources, contract employees, and completed studies or projects are just some of the examples of knowledge that may already reside in an organization. Overall, federal agencies—and especially the managers in agencies—must create a learning culture.

9. Build in Reliability, Clarity, and Transparency

Agency budgets and management decisions must support full implementation of the system. Congress, OMB, OPM, and agency political and career executives must ensure that agency appropriations are reflective of a commitment to this system.

The new system must be reliable so that employees are treated in a consistent manner as dictated by individual facts. Reliability means consistent conformance with policies so that the same set of circumstances always leads to the same decisions and results.

Features of the new system also must be clearly understandable to participants and managers alike. Simple guidelines for each

component will ensure that there are no suspicions or confusions about how new hires and existing employees are compensated and moved throughout the system. Agencies need to provide adequate training to ensure that managers and employees are comfortable with their respective roles in the new system. The new compensation system must achieve and maintain a "line-of-sight" so that pay levels, adjustments, and increases are easily linked to participants' performance and contributions. Participants should be able to comprehend the role their work and performance play in accomplishing organizational goals and how that relates to their compensation. Line-of-sight reinforces the motivation of IT workers since they tend to desire work assignments that are meaningful and challenging.

Maintenance of the compensation system will fall to agency HR specialists as well as agency managers. If the system is too burdensome or complex, it may not be accepted. If it is too difficult to understand and maintain, it may result in inefficiencies and mistakes. Design of the system at the overall federal level and at the individual agency level should be such that it will be relatively easy to implement initially and maintain in the future.

10. Implementation

Detailed implementation planning and execution is an essential component of success. At a minimum, the following steps must be taken:

- identify champions for the new system in the political and career leadership of each agency
- translate the recommendations of the report into legislative and programmatic action items
- translate the legislative and programmatic decisions into detailed agency by agency action items
- develop a communications strategy
- develop an education strategy
- develop a detailed plan to carry out the communications and education strategies
- provide sufficient funding for both the system and the implementation activities

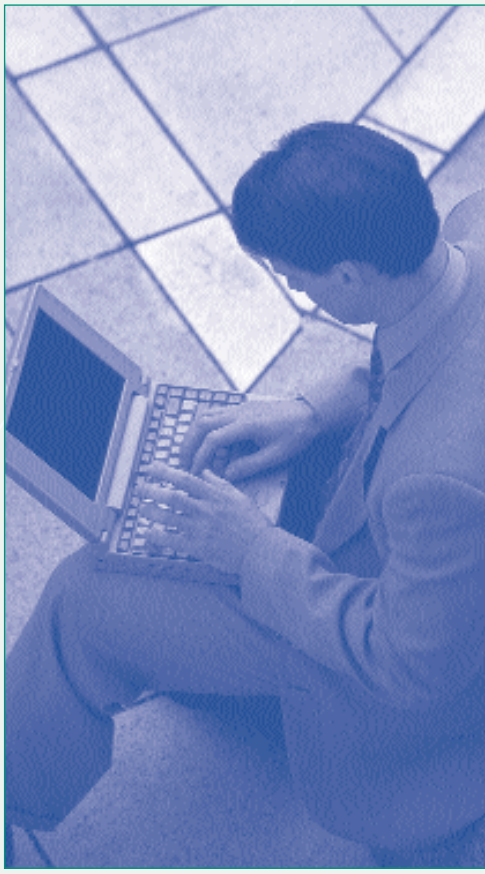
CHAPTER 5

BUSINESS CASE ANALYSIS

The project team performed a business cases analysis to use as a tool in selecting the most viable alternative compensation system for IT professionals. Each alternative was considered in terms of how it would accomplish the following objectives of the CIO Council and the federal government:

- reduce the skill shortage in traditional IT jobs
- maintain competitiveness in bringing on employees with new or emerging IT skills
- manage an increasingly complex, multidisciplinary, and dynamic IT workforce

Typically, such analyses consider all of the documented costs and benefits of each element of each system alternative. The disadvantages of this type of cost-benefit analysis, as the CIO Council noted in its publication *ROI and the Value Puzzle*, are that it can be impossible to adequately quantify all elements and it is difficult to not impart personal judgement or bias over the inputs.



In this study, the project team found little in the way of specific measures or indicators, with corresponding baseline data, to gauge the impact of the many recent HR innovations highlighted earlier in this report.

However, the team evaluated four previous federal demonstrations and interviewed individuals knowledgeable about related outcomes and costs. Because these demonstration projects documented baseline data and used it as a point of comparison to identify results in future years, they are an excellent source of information for use in the business care analysis. In this way, the team was able to marshal related inferential data on benefits and costs, identify key assumptions and scenarios, and organize its business case around the relative likelihood of each alternative (or model) conferring the greatest return to the government at reasonable cost.

METHODOLOGY

The methodology employed in developing this analysis was based on the atypical circumstances inherent in the IT professional work environment, as described earlier in the study report. This methodology looks closely at the anticipated intangible benefits as well as the likely tangible, non-quantifiable benefits associated with the investment alternatives. While the typical business case analysis involves a comparison of costs to benefits, the ambiguity of this uncharted territory led the team to look most closely at qualitative measures as they might impact the CIO Council's desired outcomes.

MAKING THE BUSINESS CASE

- clarify system goals and desirable results that should be attained by the pay system
- examine the current system, analyzing the existing problems(s) and likely impacts (or benefits) if no action is taken
- rank and score the key elements of the current system based on the likelihood of accomplishing desired results (based on the research and considered views of the team's expert members)
- explore alternative solutions to the status quo (in this discussion draft, the project team has explored two alternative models)
- project the likely system benefits (both monetary and non-monetary) of implementing proposed alternatives (based largely on four related federal demonstrations projects and the considered experience and expertise of the Academy's Center for Human Resources Management)
- rank and score the key elements of each against desired results (again, based on the project team's research, related federal demonstration project findings, and considered views of the team's expert members)
- select the option with the highest score and perform a cost of ownership analysis, looking specifically at the employee and HRM costs and net program impact involved in developing and implementing the new system
- define assumptions used in framing the analysis- particularly as they relate to sensitive elements
- perform a risk analysis examining the program management, technical, time, and cost risks

SUPPORTING THE AGENCY MISSION

Ultimately, the CIO Council needs to ascertain the likelihood of the current system, a slightly modified system, or the robust market-driven model adequately supporting agency mission needs. That is, having an IT workforce in sufficient numbers, with a range and depth of skill levels to adequately support a variety of complex and dynamic mission requirements. For example, how would the National Weather Service (NWS) expect to realize its goal of increasing warning times on life-threatening hurricanes and tornadoes without the highly skilled and motivated IT workers (both internal and contract staff) who presently support its mission in the following ways:

- providing computational and display functions for operational NWS sites
- providing open access to extensive agency datasets acquiring and processing data from an array of sensor systems and local sources
- providing and interactive communications system to interconnect NWS operational sites and to broadcast data to these locations
- disseminating warning and forecasts in a rapid, highly reliable manner

- making the transition from the existing automated field operations system to the restructured operation

The overall management system that makes these "benefits" possible consists of more than the HR and IT sub-systems. It includes other key occupational areas (e.g., procurement, finance, etc.) as well as a wide range of program operations and policy managers who create the kind of workplace climate that will attract and retain top-notch IT professionals over time.

Implications of Federal Demonstration Projects

The team relied on inferences that could be drawn from earlier studies on related HR reform demonstrations. Much of what the team learned from these demonstrations that relate to the business case is summarized in Appendix P: Federal Demonstration Projects. In particular, the team examined results and cost-related findings from the following projects:

National Institute of Science and Technology (NIST)

A project begun in Maryland and Colorado in 1988 for 3,050 scientists and engineers, administrative staff, technicians, and support staff that was made permanent in March 1996. Among the more relevant findings from this demonstration project:

- Recruitment bonuses have been used sparingly but successfully to attract candidates who might not have accepted federal jobs otherwise. Data show that NIST has become more competitive with the private sector and that employees are less likely to leave for reasons of pay.

- The manager's role in personnel management has been strengthened through the delegation of personnel

authorities, without negatively impacting job satisfaction, which has remained higher after implementation of the demonstration project.

- NIST has implemented a more flexible and less cumbersome personnel system.
- NIST has succeeded in implementing a successful pay-for-performance-system.
- More than two-thirds of NIST employees support the demonstration project, which compares favorably with the Navy Demonstration Project results.

The Department of the Navy

This demonstration project was implemented at two Navy research and development laboratories—the Naval Weapons Center (NWC), China Lake, California; and the Naval Ocean Systems Center (NOSC), San Diego, California—in July 1980. Nearly all workers were brought into the project by the end of 1982, and as of January 1990, there were 5,384 covered employees at NWC and 3,291 at NOSC. Findings included:

- The Navy achieved its main objective: increased retention of high performers. Turnover among high performers at the demonstration labs has been consistently lower (3.5 percent) than at the comparison sites (5.5 percent) that had no organization-wide, pay-for-performance system.
- Performance rating distributions in the Navy demonstrations were found more rigorous than in the rest of government. In most years, about 50 percent of employees were rated as average, and no more than 10 to 12 percent were rated outstanding. Under the federal merit pay system, the percentage of those rated above average rose to 82 percent in 1991.
- Using historical spending levels as a basis, the Navy labs came up with annual funding levels of 2.3 to 2.4 percent of payroll to fund their pay-for-performance system. During the 1980s, a high performer was able to earn merit increases of up to 10 percent. In contrast, the federal merit pay system provided for a maximum merit increase of 7.0 percent (including comparability). The Navy demonstration labs showed the lowest cost for their pay-for-performance system, with average salaries about 2.0 percent higher after 10 years than their control sites under the GS system.

The Department of Commerce

Commerce's Personnel Management Demonstration Project was implemented on March 29, 1998 and is scheduled to last five years (March 2003). It was designed to apply several of the HR interventions from an early demonstration project within DOC to a wider range of occupational areas within organizations with different missions. This project seeks to build on the NIST venture and determine whether interventions in that project can be successfully implemented in other DOC organizations. The results:

- According to Booz, Allen, and Hamilton (BAH), the National Finance Center's payroll and personnel system indicates that high-rated employees received higher pay raises and bonuses under the new system after the first year of project implementation. These results provide evidence that the pay band structure provides the flexibility to reward high performers with salary increases.

- Employees believe that pay bands provide a tool whereby DOC can be more competitive with other government agencies as well as with other public-sector companies. By increasing a hiring official's flexibility in establishing a new employee's base pay, DOC can attract candidates that would have otherwise taken a position elsewhere.

- BAH reported that supervisors in the demonstration group agreed more frequently that their pay system was more flexible than did comparison group participants. Additionally, information from interviews with pay pool managers indicated a new flexibility previously unavailable to them. Pay pool managers stated that the new pay bands are easy to use and understand, and they provide the flexibility to establish competitive starting salaries. According to pay pool managers, this system has already made a difference to their organizations. They said their ability to start highly qualified candidates at higher salary rates than they would have received under the old system has increased their ability to hire sought-after candidates.

- BAH focus groups revealed that supervisors from the demonstration group did not feel that the new automated classification system was a drastic change from the old system. However, supervisors did indicate that the new system offered them more control over the classification process. Supervisors agreed that this was an important step in providing more autonomy for their work unit.

- BAH focus groups revealed that DOC employees believe the new automated classification system does not improve upon the classification decisions but instead improves the process of classification. Because the new system allows managers to make classification decisions, it has reduced the amount of time managers have to spend interacting with the HR offices.

The Naval Research Laboratory

The NRL's Personnel Demonstration Project included a broad band classification/pay system similar to the proposed market-driven reform model. The implementation of pay banding has afforded NRL the opportunity to restructure its research and development organizations to take advantage of new HRM flexibilities. Such restructuring has the potential advantage of freeing scientists and engineers to concentrate on research and development work, thereby enhancing mission accomplishment.

LIKELIHOOD OF SUCCESS

Table 5-1 compares the three models in terms of how useful the six key elements of each will be to the federal government as it tries to reduce IT skill shortages, bring on new skills, and manage complexity. Based on study results (e.g., literature search, interviews, focus groups, etc.), the study team rated the estimated impact these divergent approaches are likely to have on desired outcomes (over the next 10 years) as high (5), moderate (3), or low (1). (The three models are: C = current, MS = modified schedule [Model One], MD = market-driven [Model Two])

Inasmuch as the market-driven model would make major changes to the current system to reflect market dynamics, increase management and organizational flexibility, and place an emphasis on performance and competencies, the panel believes such a system will likely have significant positive impacts on desired outcomes. The proposed alternative system for IT professionals includes broader pay ranges, new flexibilities in setting pay, additional bonus categories, and more emphasis on training.

TABLE 5-1
CURRENT SYSTEM VS. ALTERNATIVE MODELS

System Elements	Reducing Skill Shortages			Bringing on New Skills			Managing Complexity			Average Rating		
	C	MS	MD	C	MS	MD	C	MS	MD	C	MS	MD
Cash Compensation	1.0	1.0	3.0	1.0	3.0	3.0	1.0	3.0	5.0	1.0	3.0	3.7
Performance Evaluation	3.0	3.0	5.0	1.0	1.0	5.0	1.0	1.0	5.0	1.7	1.7	5.0
Continuous Learning	1.0	1.0	5.0	1.0	1.0	5.0	1.0	1.0	5.0	1.0	1.0	5.0
Recruiting	3.0	3.0	5.0	1.0	1.0	5.0	1.0	1.0	5.0	1.7	1.7	5.0
Benefits	3.0	3.0	5.0	1.0	1.0	5.0	NA	NA	NA	1.7	1.7	5.0
Work-life Programs	3.0	3.0	5.0	1.0	1.0	5.0	1.0	1.0	5.0	1.7	1.7	5.0
Total Average	2.1	2.7	4.7	1.0	1.3	4.7	1.0	1.4	5.0	1.5	1.8	4.8

C= Current Model MS=Modified Schedule (Model One) MD=Market Driven (Model Two)
High=5 Moderate=3 Low=1

Estimated Costs and Related Monetary Impacts

Clearly, the market-driven approach of Model Two provides a much greater likelihood of achieving the government's priority outcomes (the intended benefits of the system redesign) than either the current system or the modified GS system. An understandable consideration, however, is the cost of these improved functionalities. At a minimum, we believe the government will want to have estimated data on three cost items: employee costs, HR program costs, and program impact benefits. (This approach is an adaptation of a model for developing costs used by Jack J. Phillips, a highly regarded international consultant and author, in *Accountability in Human Resources Management*, Gulf Publishing Company, Houston, Texas, 1996.)

1. Fully-funded employee costs—The direct pre- and post-cost of maintaining IT professionals projected for a 10-year period. These fully loaded cost estimates should include direct compensation, benefits, and direct and indirect support (e.g., office space, equipment, etc.).

2. Program costs—The pre- and post-cost of providing IT professional-related HR program support and related costs of managing the program. This includes the direct cost of maintaining a portion of the HR function and any other expenses incurred specifically in support of efforts to recruit, retain, and develop IT professionals, and other costs related to design, implementation, and evaluation of the program. Experience from pilot projects should be extrapolated and applied to an operational model, with program costs spread over a 10-year period.

3. Impact costs and monetary benefits—The pre- and post-costs and related monetary outcomes (and estimated value of non-tangible benefits) resulting from special program initiatives. These impact cost areas—which may be avoided costs or longer-term indirect financial benefits—include increased worker productivity, improved ability to hire quality staff, reduced turnover of high performers, increased internal referrals, reduced absenteeism, reduced grievances, improved safety and health, improved customer satisfaction, improved employee satisfaction for stronger contributors, etc.

Cost Implications of Federal Demonstration Projects

Again, the team relied on inferences that could be drawn from earlier studies on related HR reform demonstrations (Appendix P: Federal Demonstration Projects). Cost-related findings from the four projects include:

National Institute of Science and Technology

After eight years, mean salaries at NIST were 10 percent higher than for the GS comparison group. Salaries of administrative employees rose the most, and after eight years, the salary difference between NIST and the comparison group increased to 21 percent over the baseline difference. There are two reasons for this difference. At

baseline, salaries were five percent lower due to a more junior population. The second reason is that the banding of grades 13 and 14 combines what was the full performance level for many of these employees (GS-13) with a senior expert/supervisory level. Between 1988 and 1995, most employees migrated into the upper (GS-14) part of the band.

The Department of the Navy Demonstration Project

Average salaries have increased two to three percent under banding. However, recruitment and retention has improved, and there has been a 50 percent reduction in turnover of higher performers. Administrative cost savings of 0.8 percent of payroll resulted from reduced paperwork and less time spent on classification due to broad banding. And the Navy demonstration labs showed the lowest cost for their pay-for-performance system, with average salaries about two percent higher after 10 years than their control sites under the GS system.

The Department of Commerce Personnel Management Demonstration Project

Objective data show that demonstration group employees received salary increases ranging from 0.0 percent to 12.2 percent based on performance. The average increase was 2.73 percent, with almost two-thirds receiving increases of less than 3.0 percent and almost 12 percent not receiving a salary increase at all.

The Naval Research Laboratory's Personnel Demonstration Project

As mentioned earlier, the implementation of pay banding has afforded NRL the opportunity to restructure its research and development organizations to take advantage of new HRM flexibilities. Such restructuring has the potential advantage of freeing scientists and engineers to concentrate on research and development work and to generate administrative overhead savings in terms of work processes. In effect, redeploying time to professional work equates to improved productivity, although it is difficult to project the extent of these indirect financial benefits.

TABLE 5-2
ESTIMATED COSTS/SAVINGS OF MARKET DRIVEN MODEL ($ IN MILLIONS)

Proposed HR System Innovation	Employee Costs (per year)	Program Costs (per year)	Program Impact Cost (per year)	Net Costs/ Financial Benefits (per year)	Net Costs (10 years)
Pay banding and performance-based pay	+$153.0	-	+$191.0	-$38.0	-$380.0
Continuous learning & IT competency system	+$156.0	-	+$247.0	-$127.0	-$1,270.0
Market-based pay	+$51.0	-	+$51.0	-	-
Targeted bonus systems	+$25.5	-	+$51.0	-$13.2	-$255.0
Total Costs	+$379.5	-	+$538.0	-$2,008.0	-$2,005.0

ESTIMATED COSTS/FINANCIAL BENEFITS OF MARKET-DRIVEN MODEL

Table 5-2 summarizes the estimated additional cost and/or indirect financial benefits of adopting the market-driven reform model for each of four major sets of proposed innovations over a 10-year period. To accomplish this, the team identified key assumptions based on experience from previous demonstrations and related inferences drawn from the current study findings. Assumptions and major cost-sensitive actions or investments include:

Employee Costs

These estimates are based on the cost of maintaining an IT professional workforce of 60,000 employees, at an average annual salary plus fringe benefits (at 42 percent) in year one of $85,000 per employee (or $5.1 billion for the government IT workforce overall).

1) *Pay banding and performance-based pay*—Estimates from federal demonstration projects and related literature suggest that the combined effect of classification reform and more flexible salaries through pay banding, with the added incentive of performance-based pay, will lead to an average three percent or more rise in cash compensation each year as a result of increased salaries and performance bonuses.

2) *Continuous learning*—Similarly, investment in continuous learning, including the emphasis on competency development, will

need to rise by roughly three percent per year (from an estimated .015 to .045 percent) if this element of the market-driven model is to be sufficiently effective.

3) *Market-based pay*—Also, market pay adjustments will average about one percent a year over the long run.

4) *Targeted bonuses*—A variety of targeted bonuses (e.g., for recruitment, referral, and retention) is expected to cost approximately .05 percent per year.

The net effect is likely to be an increase of up to $400 million annually compared to the current system's employee cost. And while higher-graded employees are expected to leave the system at mid-decade, presumably being replaced by more junior workers, it is also likely that new employees will demand higher starting salaries as the job roles and assignments become more complex.

HR Program Costs

The net cost effect in administering the overall program (for both HR professionals and IT managers) is expected to be slightly positive. Previous demonstrations suggest reductions of upwards of 60 percent in the cost of administering the classification function. Taken together, classification reform and more flexible salary structures (in other words, a shift to broad-banding) should lower program costs for the HR team, with nominal increases in the demands on IT managers to spend more time on appraisals and determining pay adjustments and awards. Other elements of the reform are not likely to have an effect on overall program costs. The costs associated with increased emphasis on continuous learning and IT competencies are built into the fully-loaded cost of training and other employee learning and growth investments (identified as employee costs in Table 5-3). Because these cost fluctuations are expected to be nominal over the 10-year period, the team has not indicated a financial impact in its cost projection.

HR Program Impact Costs

It is in the area of program impact costs and savings that previous experience implies significant longer-term benefits should accrue.

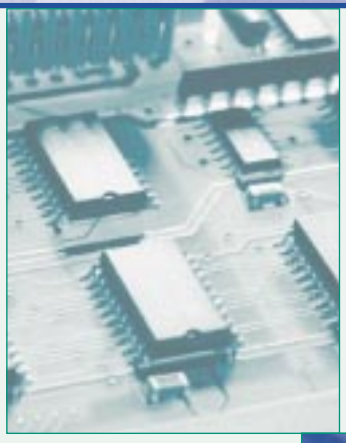
1) *Pay banding and performance-based pay*—Although little hard documentation exists on long-term cost benefits, those familiar with the research expect that broad-banding efforts in concert with performance-based pay are likely to generate an indirect financial benefit estimated at 7.5-10 percent a year (less in the early years, more in the out years). This will likely take the form of improved ability to hire quality staff, reduced turnover of higher performers, improved employee satisfaction for stronger contributors, and increased worker productivity. For purposes of this business case, the team has adopted a more modest return over the 10-year period of 3.75 percent.

2) *Continuous learning*—Investing in the learning and growth of the IT professional community is likely to result in additional monetary benefits, as agencies experience increased worker productivity, larger pools of new hires with

highly relevant skills, reduced turnover of higher performers, greater customer satisfaction, and improved employee satisfaction among stronger contributors. Here again, the team believes it prudent to expect upwards of a 1.25:1.0 return on learning and growth investments over a 10-year period. This equates to an average annual indirect benefit of approximately $287 million. (Based on a 0.045 percent investment of IT workforce salary annually.)

3) *Market-based pay and targeted bonuses*—These benefits will be compounded by the added attraction of market-based pay and targeted bonuses, with the latter also leading to increased internal referrals. It is estimated that each of these compensation enhancements will generate additional improvements in both recruitment of highly talented new employees and retention of higher performing IT professionals already in the federal workforce. The indirect financial benefits, estimated at a modest 0.01 percent for each, should take the form of reduced retraining costs, improved customer satisfaction, and improved productivity (as a result of both higher employee satisfaction and fewer unfilled jobs).

As can be seen in Table 5-3, the team projects net indirect financial benefits of more than $2 billion over the 10-year life of the initiative. While these net financial benefits do not represent less investment in the IT professional area (which will actually rise as a result of increased employee costs by an estimated $380 million a year), they do reflect a greater return on that investment over the 10-year period. Moreover, even if the net result were simply to have these market-driven investments pay for themselves – to break even after 10 years – this option would be preferable to the status quo. This is because it is unlikely that anything less than a dramatic shift in approach appears capable of closing the gap and meeting mission requirements under present circumstances.



SENSITIVITY ASSUMPTIONS

Given the picture portrayed in Table 5-3, variation in cost does not seem to be a major sensitivity factor in implementing the proposed market-driven model. The assumption is that the proposed changes will more than pay for themselves. However, the same cannot be said for assumptions as they relate to implementation of all elements of the model to achieve its full impact. That is, for the market-driven approach to work effectively, the panel believes that virtually all of the elements enumerated in Table 5-3 will need to be in place from the outset. Any significant weakening of the model's robustness could seriously jeopardize its chances of success.

RISK ANALYSIS

Risk management is the process of identifying those conditions or events that have the potential for adversely or unexpectedly affecting an initiative, quantifying the possible effects, and implementing mitigation strategies to deal with the risks significant enough to warrant action. Risk management should be an integral and continuous part of all implementation planning and project management. For the purposes of this analysis, the following table (Table 5-4) is meant to identify applicable risk categories, risk factors for further examination, and an assessment of these risk factors. Here again, the team has identified factors its research suggests will potentially pose a risk.

TABLE 5-3
MAJOR SENSITIVITY ASSUMPTIONS FOR THE MARKET-DRIVEN MODEL

- full flexibility through a cafeteria-style benefit plan
- retiring federal IT professionals to return without forfeiting any portion of their base salary
- base salaries that are within the range of the private sector
- all increases to pay associated based on competencies and performance/results
- a variety of bonus options (e.g., recruitment bonuses, retention bonuses, and "scarce skills" bonuses, among others)
- a separate executive salary band for IT executives, with agency flexibility to maintain at least minimum salary differentials among the levels of executive management and to provide attractive opportunities for qualified IT executives
- all IT executives participate in a corporate-style incentive plan, with awards linked to the achievement of agency IT goals
- an across-the-board pay-for-performance system
- elimination of government classification as base salary, replacing current standards with short, generic lists of duties by various specialty areas and levels
- narrow, rigidly confining series would be replaced by specialty areas
- referral bonuses, with "pre-screening" of candidates by the referring employee
- compensation systems to reflect new requirements, technologies, and practices
- agency discretion in setting up and administering their training, education and development programs
- financial planning offered to all IT professionals
- federal managers and HR specialists will market these benefits and programs so that potential IT workers are aware of them
- recruiting efforts will emphasize various worklife programs, and benefits and aspects of the different programs will be featured in recruitment materials and in advertisements
- federal agencies will re-assess their worklife programs to ensure that: resources are leveraged to the maximum benefit, potential IT candidates are told about their offerings, and existing workers are informed of both new and existing benefits

TABLE 5-4
RISK ANALYSIS

Potential Risk Factors	Risk Assessment	Risk Mitigation
Program Management and Policy Risks ■ concerns of other competitors ■ concerns of federal unions ■ concerns over change of current federal IT community ■ congressional concerns ■ inadequate support from key internal partners (e.g., HR directors, CFOs, procurement executives, etc.) ■ inadequate implementation by HR and IT managers	■ delays and weakened package ■ delays and weakened package ■ delays and weakened package ■ legislation lagging market forces ■ delays and ineffective implementation ■ delays, ineffective implementation, and weak incentives for culture change	■ marketing and change management strategy ■ marketing and change management strategy ■ marketing and change management strategy ■ legislative/congressional affairs strategy ■ internal management strategy ■ collaborative change management strategy
Technical Risks ■ unworkable interface with existing HR/finance systems ■ lack of market-based data collection vehicle	■ low/moderate problem with implementation (Appendix F) ■ difficulty in budgeting for wide pay ranges	■ plan for piloting requirements and assuring lead-time (Appendix F) ■ develop system and survey to identify industry mid-point
Timetable Risks ■ difficulty gaining agency consensus ■ lack of readiness in developing specifications for redesign ■ difficulty in gaining OMB approval and/or resources	■ policy development and implementation delays could undermine confidence in the reform effort	■ integrated strategic management plan and organization support to sustain the effort governmentwide
Cost Risks ■ inadequate funding for major innovations ■ inability to sustain investment for 10 years	■ need for budget support from all players throughout the 10-year effort	■ integrated strategic management plan and organization support to sustain the effort governmentwide

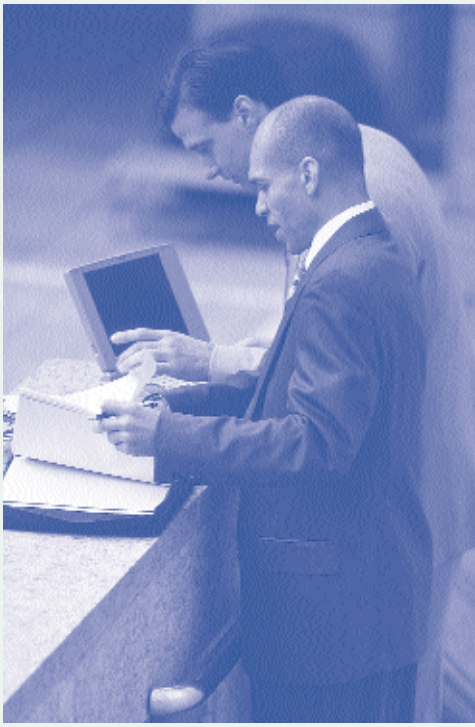
CHAPTER 6

CONCLUSION

All of the recommendations for a market-based system and its related components described in the recommendations are already in place somewhere in the federal government. These recommendations are unique only in that they focus on a particular occupational group. However, there are other significant factors that will determine the success or failure of the new system. They include the following:

RELEVANCE TO MISSION

Any change in the status quo is usually met with some resistance. The best way to convert those reluctant to accept the proposed change is to convince them that the changes will enhance their ability to accomplish their organizational objective. Based on the enormous utility of IT and the Internet, all public-sector organizations can benefit from an IT function operating at optimum efficiency and effectiveness.



Everyday thousands of citizens are conducting more and more private-sector services electronically on the Internet. Their service level expectations are rising and their demands of their government for an equal level of service is increasing. In order to meet this demand, the federal government must be able to attract and retain the

requisite IT professionals to ensure that technology is being utilized in an effective manner to deliver quality services to the public.

LEADERSHIP

Leadership is the key to successful implementation of the changes recommended in this study. There must be central agency and organization leadership from the CIO Council and its members, OPM, OMB, and the President's Pay Agency (OMB, OPM, Department of Labor), the President's Management Council, and similar entities.

Changes of this magnitude require champions if they are to move from theory to reality.

There must also be leadership within individual agencies from both the political and the career executives. Their roles must be buttressed by leadership and support from subordinate program managers, the offices of HR and finance, and from employees and their unions. Changes of this magnitude require champions if they are to move from theory to reality.

CULTURE

The change from a culture of entitlement to one of performance as a basis for compensation and other rewards is a major cultural shift. The individuals who will determine success or failure will be the IT supervisors and managers. In the past, many federal managers have viewed responsibilities such as pay administration, performance appraisal and employee development as the exclusive domain of HR professionals. These programs were viewed as an intrusion on the mission as opposed to a tool to assist in achieving the mission.

This mindset among federal IT managers must change if all benefits of the proposed pay system are to be realized. Managers must invest in human capital in order to develop a workforce with the requisite skills for now and the future. Managers must also continue to ensure fair and equitable treatment of all employees but provide recognition and pay commensurate with employees' competencies and contributions.

CHANGE MANAGEMENT

All agencies will need to invest in developing and implementing change management strategies. This will require commitment at every level of individual agencies as well the commitment of the central agencies and organizations. The single greatest reason for the failure of major system changes is not the system design, but the failure to prepare the workforce and assist them in moving from the current state to the desired state.

WORKFORCE PLANNING AND DATA COLLECTION

The proposed IT pay reform will require strategic workforce planning. Agencies will need to forecast future IT skill requirements to ensure that they are paying to attract, retain, and develop the appropriate workforce. In order to accomplish such planning objectives, HR and IT managers will have to enhance their data collection activities.
In a market-/competency-based pay system, data regarding skills and competencies must be maintained in a manner consistent with common market practices. Such data will also be essential for determining the appropriate HR remedies for handling direct-hire employees who have skills that are no longer needed or may soon be obsolete. HR professionals working with IT managers to accomplish strategic workforce plans can utilize this information to determine the appropriate level of outsourcing or geographic relocation of the work.

With enhanced HRM data-collection abilities, the federal government will be able to evaluate and compare their data and trends with the private sector. This analytical capability will be invaluable for future human capital investment decisions.

Funding

The federal government must be willing to make available the funds and other resources required for successful implementation. Change of the magnitude suggested here is not easy and it is not cheap. There must be both an understanding of the costs and a willingness to bear those costs because of the benefits that will ultimately be realized.

Utilize Federal Expertise

The federal government is at risk of losing knowledge and skills that are not immediately replaceable through a wave of retirements. Historically when retired federal employees returned to work, they could only earn the difference between their annuity and the pay of the position to which they returned. Recently, those restrictions were lifted for IT workers. This flexibility should continue and be incorporated into the new system for IT employees. In addition, policies and procedures should be established to provide incentives for retirement eligible employees, whose skills are needed by their agencies, to remain on the rolls for a transition period (e.g. part-time) without reducing their retirement annuity.

Executive Compensation

The Senior Executive Service (SES) was created as the platform for identifying, developing and compensating federal executives. It is based on the premise that executive roles can be filled by generalists with demonstrated executive capabilities. The SES was never intended to fill those unique jobs where technical knowledge is at least as important as the leadership skills. Moreover, SES pay levels are not significantly different from the executive pay levels in some of the states and counties that surround Washington, D.C. The goals of the SES and the political constraints on SES pay levels were never considered in light of the need to attract and retain well-qualified IT executives.

For these reasons, the panel recommends a separate executive salary band for IT executives that will give agencies the flexibility they need to maintain at least minimum salary differentials among the levels of executive management. In recognition of the political constraints, the panel recommends that the top of the executive band

be equivalent to the salary of the Vice President of the United States.

The panel further recommends that all IT executives participate in a corporate-style incentive plan, with awards linked to the achievement of agency IT goals. All IT executives and managers in an agency should have a portion of their cash compensation dependent on reaching or exceeding performance goals. The total of an executive's base salary and annual incentive award, should be capped at the salary of the Vice President.

IMPLEMENTATION

Detailed implementation planning and execution is an essential component of success. At a minimum, the following steps must be taken:

- identify champions for the new system in the political and career leadership of each agency
- translate the recommendations of the report into legislative and programmatic action items
- translate the legislative and programmotic decisions into detailed agency-by-agency action items
- develop a communications strategy
- develop an education strategy
- develop a detailed plan to carry out the communications and education strategies
- provide sufficient funding for both the system and the implementation activities

BEYOND IT

The federal government will continue to be evaluated by the American public in part based on its ability to deliver goods and services in a manner comparable to the private sector. Therefore, it is essential that it be able to attract and retain an IT workforce comparable to the private sector.

The federal government will not be able to attract the requisite mission critical skills unless it is able to offer

pay that is within the competitive range of that offered by the private sector. The project team's research indicates that total compensation (base pay plus benefits) is a major consideration for attracting new hires and employee retention. While base pay may not be the determining factor in an employee's decision to join or stay, it can be if pay is not within a competitive range.

The market-based system of Model Two that has been recommended has direct applicability to any mission critical skill in the public-sector that has a private-sector counterpart. Model Two could be used throughout the federal sector to remain competitive with the private sector for those skills essential to accomplishing the federal government's mission.

While the federal government's role has changed through privatization, there are certain responsibilities that are inherently governmental. The public sector has an obligation to its citizens to perform its responsibilities in the most efficient and effective manner. In order to accomplish this objective, the public sector must maintain a pay system competitive with the private sector so that the right people are in place to do the job.

[1] National Academy of Public Administration, *Comparative Study of Informantion Technology Pay System Phase I*, February 2001, pp. 56-57

[2] *Responding to the Crisis in Information Technology Skills: A Report to the Secretary of the Treasury*, February 1999, p. 53.

[3] This number extrapolated from property, plant, and equipment investment in the Department of the Treasury's FY 2000 Accountability Report, page 74. This report shows that Treasury has ADP Software (service life of 2 to 10 years) of purchase value of $90 million and depreciation of $31 million for a net asset value of $59 million. Treasury has ADP hardware (3-5 year service life) with purchase value of $1.409 billion and accumulated depreciation of $382 million for a net asset value of $1.027 billion. Total for Treasury is $1,086,000,000 in IT assets as of 9/30/2000. Treasury is about 10 percent of the federal government—it represents about 10 percent of federal IT workforce and federal IT work. Multiplied Treasury number by 10 to get at total federal investment.

[4] *Bridge the Gap*, Study by ITAA, 2000.

[5] *When Can You Start: Building Better Information Technology Skills and Careers*, Study by ITAA, April 2001.

[6] Claudia Allen, "Finding Technical Talents When Demand Outpaces Supply," *Journal of Career Planning and Employment*, Summer 1997.

[7] Randall E. Strauss, "Employers Beg for Techie Help in the Valley," *Fortune*, July 21, 1997.

[8] National Academy of Public Administration, "Recruitment and Retention Data Book Extract, *Federal Government IT Workforce Profile: 1996-2000*," March 2001.

[9] The total number of IT professionals reported by OPM is different/less than the total number reported by BLS. OPM's number includes individuals in GS-334, GS-854, and GS-1550 classification series only. BLS data includes broad occupational categories, including systems analysts, computer engineers, computer programmers, and all other computer scientists. The discrepancy is likely due to systems analysts, IT project managers, IT trainers, and other IT professionals classified by OPM standards in series other than the three included in OPM's data.

[10] National Academy of Public Administration, "Recruitment and Retention Data Book."

[11] Kelly Croft, Presentation to National Academy of Public Administration conference, "Workforce Quality," April 2001.

[12] "Retaining Your Hot Skills Employees—Using Dollars and Sense," *American Compensation Association Journal*, 1st Quarter 2000.

[13] National Academy of Public Administration, "Recruitment and Retention Data Book."

[14] Congressional Budget Office Memorandum, Comparing Federal Salaries, p. 19.

[15] Ibid., p. 10.

[16] Tanya Ballard, "OMB Chief Paries Questions About Pay Gap," *Government Executive*, May 11, 2001.

[17] John Palguta,, "Directors Perspective HR Managers in Transition," *Issues of Merit*, December 2000, p. 2.

[18] *Responding to the Crisis in Information Technology Skills: A Report to the Secretary of the Treasury*, February 1999, p. 4.

[19] Marilyn Mackes, Presentation to National Academy of Public Administration conference, "Workforce Quality," April 2001.

[20] Lyle M. Spencer, Jr., Ph.D., "Performance Management Systems," *Compensation Handbook*, 1991, p. 488.

[21] National Academy of Public Administration, "Study of Pay," p. 56-57.

[22] Michael E. Hora and Marvin Schiller, Ph.D., "Performance Measurements," *Compensation Handbook*, 1991, p. 493.

[23] *Responding to the Crisis in Information Technology Skills: A Report to the Secretary of the Treasury*, February 1999, p. 53.

[24] Ibid., p. 51.

[25] American Society for Training and Development, "Sharpening the Leading Edge." 2001.

[26] *Responding to the Crisis in Information Technology Skills: A Report to the Secretary of the Treasury*, February 1999, p. 4.